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Elementary preservice teachers' beliefs about teacher effectiveness

Mauricio A Herron Gloria
Purdue University

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Aman Yadav
Chair

Michael Yough

George Bodner

David Eichinger

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ELEMENTARY PRESERVICE TEACHERS' BELIEFS ABOUT TEACHER EFFECTIVENESS

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For Juan, Giselle, and Tatiana. You are the reason I got this far.

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ABSTRACT

Herron Gloria, Mauricio A. Ph.D., Purdue University, May 2015. Elementary Preservice Teachers' Beliefs about Teacher Effectiveness. Major Professor: Aman Yadav.

The purpose of this study was to explore elementary preservice teachers' beliefs about effective classroom instruction and the characteristics and behaviors of effective teachers, and to examine how these beliefs may vary across teacher education. Participants were 24 students enrolled in a teacher education program at a large mid-west university in the United States. Data were collected using an intensive interview protocol consisting of semi-structured questions, and analyzed using grounded theory strategies (Charmaz, 2006, 2012). Using a constructive/interpretive framework (Lincoln & Guba, 2013), the analysis of the data indicated that participants' beliefs about teacher effectiveness dwell around 12 overreaching categories; five regarding effective instruction (e.g., the physical environment of the classroom, types of pedagogical approaches), four about the characteristics of effective teachers (e.g., teacher persona, teacher control), and three in relation to the behaviors of effective teachers (e.g., student-related behaviors, control-related behaviors). The analysis also indicated potential variations in participants' beliefs about teacher effectiveness according to the time since they enrolled in the program. Implications for theory and practice and recommendations for future research are provided.

CHAPTER 1. INTRODUCTION

Problem Statement

Over the last century, issues related to effective classroom instruction and the interplay between teachers' characteristics and behaviors and student learning have been investigated under the umbrella of research on teacher effectiveness (for thorough reviews, see Barr, 1961; Domas & Tiedman, 1950; Doyle, 1977; Gage, 1972; Harris, 1998; Kyriacou, 1985; Mitzel & Gross, 1956; Porter & Brophy, 1988; Yamamoto, 1963). Systematic research efforts in this field can be traced from the early 1950's, when the American Educational Research Association (AERA) established the first criteria for studying teacher effectiveness based on teacher effects and teacher traits, characteristics, and classroom behavior (Barr et al., 1952). Based on the assumption that "teaching matters for learning" (Good, Biddle, & Brophy, 1975), the main goal of the teacher effectiveness movement has been to develop an empirically based framework for effective teaching. A framework for effective teaching would help identify factors that influence student growth and academic achievement, as well as inform teacher educators and policy makers on how to better prepare and evaluate future generations of teachers (Brophy, 1979/2010; Rosenshine, 1976).

Our current understanding of effective classroom instruction and the characteristics and behaviors of effective teachers has grown considerably, and the

general consensus is still that teaching has critical effects on students' growth and academic achievement (Darling-Hammond, 2009; Liston, Borko, & Whitcomb, 2008; Newton, Darling-Hammond, Haertel, & Thomas, 2010; Rothstein & Mathis, 2013). Researchers have found, for example, that teachers who are thoughtful and reflective about their teaching practices (Porter & Brophy, 1988), communicate their expectations to students (Rosenthal & Jacobson, 1968), emphasize academic goals (Anderson, 2004), promote a positive learning environment in the classroom (Stronge, 2007), and have strong classroom management skills (Anderson, Evertson, & Brophy, 1979) tend to be more effective in promoting student growth and academic achievement. Research on teacher effectiveness has had implications for devising teacher education and professional development programs (Cochran-Smith, 2002; Darling-Hammond & Branford, 2005; Liston, Whitcomb, & Borko, 2009), as well as the formulation of teacher evaluation reforms, particularly in the United States (e.g., Measures of Effective Teaching [MET] project, 2010; U.S. Department of Education, 2009). However, despite significant gains in our understanding of teacher effectiveness and its implications for teacher education and evaluation, we still know very little about the beliefs that preservice teachers have regarding teacher effectiveness and the implications of those beliefs for their learning during teacher preparation and later as teachers.

The Importance of Preservice Teachers' Beliefs

Research on teacher beliefs has made important contributions to our understanding of preservice and inservice teachers' thinking and its impact on their learning and teaching (Clark, 1988; Fang, 1996; Mansour, 2009; Nespor, 1987; Pajares,

1992; Pintrich, 1990; Richardson, 2003). Teachers' beliefs are related to how they define instructional tasks (Clark & Peterson, 1986, Nespor 1987), what they learn from experience (Pajares, 1992), how they make decisions in the classroom (Ernest, 1989), and how they deal with ill-structured problems (Shoenfeld, 1983).

Although historically most studies have focused on inservice teachers' beliefs, there has been a growing literature reporting research on preservice teachers' beliefs and their implications for teacher preparation (Anderson & Bird, 1994; Decker & Rimm-Kaufman, 2008; Holt-Reynolds, 2000; Pajares, 1992, 1993; Pajares & Bengston, 1995; Richardson, 2003; Schmidt, 2012). According to Pajares (1993), preservice teachers' beliefs are well established by the time they get to college, and play an important role in their perceptions of and dispositions to experiences during formal teaching training programs. From the time of their early experiences as students in the K-12 school years, preservice teachers begin to construe their own beliefs regarding different aspects of teaching (Calderhead & Robson, 1991; Lortie, 1975). In this sense, preservice teachers can be considered as "insiders" of their profession (Pajares, 1992); they have developed their own beliefs about the profession long before receiving formal training in college. This might explain why preservice teachers' beliefs about different aspects of teaching often persist during teacher preparation and can continue sometimes unaffected in their professional practice (Pajares & Bengston, 1995; Zeichner, 1986). As some scholars have suggested, preservice teachers' beliefs have the potential to hinder the effects of teacher education (Nespor, 1987; Shavelson, 1983). Therefore, "research on the entering beliefs of preservice teachers would provide teacher educators with important information to determine curricula and program direction." (Pajares, 1992, p. 328).

In light of this research, teacher educators need to recognize that preservice teachers bring their own beliefs about different aspects of teacher effectiveness, and that these beliefs could have important implications for how and what preservice teachers learn from teacher education (Brophy & Good, 1986; Clark, 1988; Minor, Onwuegbuzie, Witcher, & James, 2002; Murphy, Delli, & Edwards, 2004).

Preservice Teachers' Beliefs about Teacher Effectiveness

Previous studies of preservice teachers' beliefs about teacher effectiveness have found that, in general, preservice teachers tend to consider teacher persona (e.g., caring, enthusiastic, charismatic) and relationship with students as the most salient characteristics of effective teachers (Minor et al., 2002; Murphy et al., 2004; Ng, Nicholas, & Williams, 2010; Walls, Nardi, von Minden, & Hoffman, 2002; Weinstein, 1989; Witcher & Onwuegbuzie, 1999). For example, Witcher and Onwuegbuzie (1999) found that preservice teachers believe that being enthusiastic and ethical are more important characteristics of effective teaching than having good classroom management skills, teaching techniques, and content knowledge. Walls et al. (2002) also found that a positive emotional environment between the teacher and students is the most predominant belief about teacher effectiveness for preservice teachers.

Some of these studies have examined whether preservice and inservice teachers hold different beliefs about teacher effectiveness. For example, Walls et al. (2002) found that even though expert secondary teachers' beliefs tended to dwell more around the establishment of rules and grading than those of preservice and novice teachers, all three groups perceived the affective role of the teacher (i.e., caring and interactive with

students) as the most important characteristic of an effective teacher. Thus, it could be possible that preservice and inservice teachers' beliefs about teacher effectiveness may remain relatively stable during their teaching training and later in their work at schools (Weinstein, 1989).

More recently, however, Ng et al. (2010) suggested that preservice teachers' beliefs about teacher effectiveness could in fact change during teacher preparation. By using a questionnaire that included 22 Likert-scale items related to the characteristics of effective teachers and one open-ended question that probed beliefs about what makes someone a good teacher, Ng and colleagues found that some beliefs about effective teaching were recurrent across different points in a teacher preparation program (e.g., good teachers are kind, caring, understanding, and assist their students in their learning), whereas others did change. Preservice teachers at the beginning of the program and during fieldwork observation tended to believe that an effective teacher is one that is in control of her/his students, whereas some students during practicum perceived effective teachers as those who prevent loss of personal control.

Even though these and other studies have provided important insights into the nature and stability of preservice teachers' beliefs about teacher effectiveness, results clearly suggest that more studies are needed in order to determine whether those beliefs are stable during teacher preparation, and what implications this might have for the design of teacher education programs. Specifically, there is a need for an in-depth examination of preservice teachers' beliefs about teacher effectiveness using qualitative methodological approaches.

According to Pajares and Bengston (1995), qualitative methodologies that explore preservice teachers' beliefs could provide more opportunities for understanding the implications of those beliefs for teacher education. A methodological alternative that has not yet been explored in this area of research is to use a constructivist/interpretative framework (Lincoln & Guba, 1985, 2013; Lincoln, Lynham, & Guba, 2011) and qualitative methods of data collection and analysis to investigate preservice teachers' beliefs about teacher effectiveness. A promising approach would be to use intensive interviewing and grounded theory strategies (Charmaz, 2006, 2011; Glaser & Strauss, 1967) to investigate preservice teachers' beliefs about effective classroom instruction and the characteristics and behaviors of effective teachers, and whether those beliefs may vary during teacher preparation.

Limitations of Previous Studies

One limitation in previous studies is the use of Likert-scale questionnaires based on statements resembling researchers' views or previous models of teacher effectiveness. Munby (1982) pointed out that traditional inventories ask teachers to respond to a list of "beliefs" that may not be relevant to their professional reality. Other researchers have suggested that there is an important ecological validity issue related to this particular type of measures that can constrain our understanding of teachers' beliefs (Fang, 1996; Aikenhead & Ryan, 1992). Hence this might not be the best way to investigate both the nature and developmental trajectory (if any) of preservice teachers' beliefs about teacher effectiveness. This measurement issue could be avoided by using qualitative

methodologies that make possible an in-depth exploration of teachers' thought processes (Connelly & Clandinin, 1986; Munby, 1982).

Moreover, most of the previous studies present an important theoretical limitation because it is not a clear how researchers conceptually defined and operationalized their object of study (e.g., beliefs, perceptions, conceptions). It is difficult to determine, for example, whether researchers were obtaining information about preservice teachers' understandings of teacher effectiveness theories or about their actual beliefs; or whether researchers were referring to participants' beliefs in terms of internal representational structures of phenomena contained in the mind (representationalist stance, see Dretske, 1986; Fodor, 1981,1990), or in terms of behavioral dispositions or patterns of action and reaction pertaining to a proposition (dispositionalist stance, see, Audi, 1994; Schwitzgebel, 2002), or in terms of something else. These and other related issues are certainly not exclusive of this area of research; the misuse and abuse, as well as the eclectic proliferation of conceptual and operational definitions of the construct of "beliefs" in the psycho-educational literature is overwhelming, particularly in research on teachers' thinking (Calderhead, 1996; Fang, 1996; Pajares, 1992; Savasci-Acikalin, 2009).

Another important concern is that most of prior studies have been carried out with secondary preservice teachers, and very little is known about elementary preservice teachers' beliefs about teacher effectiveness. Research has shown that preservice teachers' beliefs tend to differ according to whether they plan to teach at the elementary and secondary school levels (Book & Freeman, 1986; Rimm-Kaufman, Storm, Sawyer, Pianta, & LaParo, 2006). Thus, additional studies are needed to investigate the beliefs

about teacher effectiveness that elementary preservice teachers bring to teacher preparation programs.

Finally, most of the research done in this area has been disconnected from researcher on teacher effectiveness (Witcher, Jiao, Onwuegbuzie, Collins, James, & Minor, 2008), and has primarily focused on the beliefs of preservice teacher about the characteristics and personal traits of effective teachers. Preservice teachers may also construe believes about other aspects of teacher effectiveness that have not been considered in previous studies (e.g., effective classroom instruction, behaviors of effective teachers), and which could facilitate a richer understanding of their beliefs about teacher effectiveness. Therefore, it could be worthy to draw from different areas of research on teacher effectiveness in order to design future studies.

Importance of the Study

This study addressed an important gap in the literature on preservice teachers' beliefs about teacher effectiveness. As discussed above, our current understanding of this phenomenon among preservice elementary teachers is still very limited. Considering the relevance of preservice teachers' beliefs for teacher education (Clark, 1988; Pajares, 1992, 1993; Richardson, 2003), as well as the longstanding consensus in research on teacher effectiveness regarding the impact that effective teachers have on students' learning and achievement (Darling-Hammond, 2009; Liston et al., 2008; Newton et al., 2010; Rothstein & Mathis, 2013), it is therefore crucial to develop a more comprehensive account of the nature and stability of preservice teachers' beliefs about teacher effectiveness. In this sense, this study provides an in-depth examination of elementary

preservice teachers' beliefs about effective classroom instruction and the characteristics and behaviors of effective teachers, and an exploratory analysis about whether those beliefs may vary during teacher preparation.

Furthermore, this study addressed the methodological and theoretical limitations noticed above. Particularly, it addressed the ecological validity issue found in previous studies using Likert-scale questionnaires based on statements resembling researchers' views of models of teacher effectiveness, and which may not necessarily assess preservice teachers' actual beliefs. This measurement issue was avoided by using qualitative methods of data collection (i.e. intensive interviewing) and analysis (i.e., grounded theory strategies) that make possible an in-depth exploration of teachers' thought processes (Connelly & Clandinin, 1986; Munby, 1982).

The present study also tackled the limitation found in previous studies regarding the conceptualization and operationalization of the construct of beliefs. Addressing this limitation is key to improving our understanding of preservice teachers' thinking and its relationship to their learning and teaching (Pajares, 1992; Griffin & Ohlsson, 2001; Smith & Siegel, 2004). The working definition of belief used in this study draws from central assumptions of the constructivist/interpretivist paradigm (Lincoln & Guba, 1985; 2013; Lincoln et al., 2011), as well as insights about the nature of this construct found in contemporary philosophy (e.g., Bogdan, 1986a-b; Sayre, 1997; Schwitzgebel, 2011).

Research Purpose and Questions

The purpose of this interpretative study was to advance toward a better understanding of elementary preservice teachers' beliefs about effective classroom

instruction and the characteristics and behaviors of effective teachers. We also wanted to examine how these beliefs may vary at different points during a teacher education program (i.e., first-year students, second- and third-year students, and student teachers). Accordingly, the research questions that guided the inquiry process were:

1. What are elementary preservice teachers' beliefs about effective classroom instruction?
2. What are elementary preservice teachers' beliefs about the behaviors and characteristics of effective teachers?
3. How do elementary preservice teachers' beliefs about effective classroom instruction and the behaviors and characteristics of effective teachers vary at different points in a teacher education program (i.e., first-year students, second- and third-year students, and student teachers)?

Overview of the Study

This study was conducted in two stages. The first stage encompassed an in-depth qualitative exploration of the first two research questions. The goal was to provide a rich and thorough account of elementary preservice teachers' beliefs about effective classroom instruction and the behaviors and characteristics effective teachers. Data were collected using an intensive interview protocol consisting of semi-structured questions (Charmaz, 2006) and analyzed using grounded theory strategies (i.e., segment-by-segment coding and focused coding, Charmaz, 2006). The second stage of the study built on the results obtained in the first stage. After the initial themes were extracted from the data, the researcher used constant comparison methods (Charmaz, 2006; Glaser &

Strauss, 1967) in order to contrast data with themes across participants' points of enrollment in the teacher preparation program. The goal was to provide a preliminary analysis regarding whether elementary preservice teachers' beliefs about effective classroom instruction and the behaviors and characteristics of effective teachers vary across teacher education.

CHAPTER 2. LITERATURE REVIEW

Theoretical Framework

Theoretical frameworks or paradigms are "overreaching philosophical systems" (Lincoln, 2005, p. 230) that guide the inquiry process and enclose the researcher's epistemological, ontological, and methodological assumptions (Lincoln et al., 2011). According to Lincoln & Guba (2013), they can be thought of as the "lenses" through which the researcher understands the phenomena being studied. For the present study, the researcher adopted the constructivist/interpretive framework proposed by Lincoln, Guba, and colleagues (Guba, 1990; Guba & Lincoln, 2005; Lincoln & Guba 1985, 2013; Lincoln et al., 2011), and developed a working definition of belief based on the work of contemporary philosophers (e.g., Bogdan, 1986a-b; Sayre, 1997; Schwitzgebel, 2011).

The Constructivist/Interpretivist Paradigm

Ontological Assumptions

Ontological assumptions make reference to the nature of reality (Creswell, 2013; Lincoln et al., 2011), or in other words to "what is there that can be known" (Lincoln & Guba, 2013, p. 37). The fundamental ontological assumption of the constructivist

paradigm is that of *relativism*, which advocates for the existence of multiple realities that are mentally constructed rather than of a single, mind-independent reality (Rorty, 2000).

The constructivist/interpretive paradigm is concerned with the nature of the social, cultural, and psychological world of humans, and not with the nature of the physical or biological world (Lincoln & Guba, 2013). In this sense, a relativistic ontology only works in the realm of the human sciences. According to Lincoln and Guba (2013), the entities with which human sciences deal exist only in a "non-concrete, intangible form." (p. 38). That is, these entities only exist in the mind of individuals and are matter of definition and convention (e.g., learning, personality, values, leadership, democracy, school culture, motivation). For example, learning, whether defined as a human capacity or process or something else, does not exist as an entity in the physical world; we cannot define its ontological status from an empirical standpoint just as we may do, let us say, with mountains (Boghossian, 2001). Rather, learning is a non-concrete, intangible reality (i.e., a mental construction) that humans in particular contexts and historical circumstances have constructed to account for a human capacity, process, or something else. Therefore, what constructivist/interpretive researchers can explore are multiple realities that are constructed by individuals in particular contextual and historical circumstances (Guba, 1990; Lincoln & Guba, 1985, 2013).

Epistemological Assumptions

Epistemology is concerned with the nature of the relationship between the knower and the knowable. The guiding epistemological assumption of constructivism is *subjectivism* (Creswell, 2013; Lincoln et al., 2011; Lincoln & Guba, 1985, 2013). That is,

the realities that are taken to exist (i.e., mental constructions) depend on a subjective transaction between the individual and his/her prior knowledge and experiences in particular social, cultural, and historical circumstances. Instead of a conglomerate of objective truths about social, physiological, or cultural foundational realties, knowledge represents realities constructed by and for humans interacting with others, and exists only in the specific "time/space framework in which it is generated" (Lincoln & Guba, 2013, p. 40).

The nature of that subjective transaction between the individual and his/her prior knowledge and experiences is thus understood as an act of construal (or sense-making effort) by which individuals coherently articulate linguistic and non-linguistic constructs (or mental realizations of unitary entities and relationships in their surrounding world, such as objects, events and other people) in order to organize and provide meaning to their experiences (Lincoln & Guba, 2013). In other words, individuals "create" their social, psychological and cultural worlds through constructions, which are "coherent, articulated set of constructs – a pattern or web of constructs and their interconnections – that make sense of some aspect (some 'chunk') of the constructor's surround (…), [and which] make possible the synthesis of personal experience and the communication of that experience to others." (Lincoln & Guba, 2013, p. 47-51). In this sense, what constructivists define as constructions are ways of making sense of something, rather than something that is isomorphic to presumably "real" or "true" elements of the world (Guba & Lincoln, 1985, Lincoln et al., 2011).

Lincoln and Guba (2013) further suggested that constructions are defined according to two elements. The first of these elements is regarded as the meaning

embodied in a construction; that is, the substance or content of the construction, or in other words, the construction's aboutness. The second element is the construction's level of sophistication, or level of complexity and scope. In this sense, constructions can be organized and interrelated in different ways, ranging from simple descriptions of single entities (e.g., making sense of a stapler) to complex theories or paradigms (e.g., making sense of racism). Additionally, since individuals are constantly trying to make sense of new experiences, both the meaning and the level of sophistication of their constructions are open to continuous refinement or reconstruction. This implies that individuals' constructions may not remain stable over time and might be modified or replaced in order to make sense of new experiences (Lincoln & Guba, 2013).

Other essential aspect of constructions is that they can be socially constructed and are sensitive to sociocultural influences (Lincoln & Guba, 1985; Lincoln et al., 2011). Even though constructions ultimately occur at the individual level (Guba, 1990), they can be developed jointly by individuals having some level of shared experience (e.g., people living in the same setting under similar personal, social, and historical conditions), or learned from others through vicarious experiences (e.g., by verbal communication or via a journal article), or inherited from culture and socialization practices (e.g., acquisition of constructions through formal education) (Lincoln & Guba, 2013). In this sense, two or more individuals can hold common or shared constructions. It is important to notice, however, that shared constructions, whether formed jointly, learned, or inherited from culture, do not have to be arranged or apprehended in the same way by a group of individuals. These shared constructions might have a "common consensual core (…) surrounded by more peripheral elements which differ in greater or lesser degree from

person to person." (Lincoln & Guba, 2013, p. 53). Accordingly, individuals may share some central aspects of the meaning embodied in their constructions (i.e., their content), as well as their level of sophistication (i.e., their complexity and scope), but shall not share the exact, same construction. In other words, although constructions can be assembled intersubjectively (e.g., jointly developed by two individuals with shared experiences), they are, ultimately, a subjective mental outcome that results from the individual's own act of construal. Hence, "the totality of constructions shared among individuals (…) can be characterized as the culture of that group." (Lincoln & Guba, 2013; p. 54).

Methodological Assumptions

Methodological assumptions point at how knowledge about what-is-there-to-be-known is acquired, and are constrained by ontological and epistemological assumptions (Lincoln & Guba, 2013). The basic methodological assumption of constructivist/ interpretive inquiry is *hermeneutic/dialecticism* (Guba, 1990; Lincoln & Guba, 1985, 2013; Lincoln et al., 2011). According to a hermeneutic/dialecticism assumption, competing constructions can be examined and contrasted in order "to move toward common consensual constructions." (Lincoln & Guba, 2013, p. 64). In other words, individuals' constructions are "elicited and refined hermeneutically, and compared and contrasted dialectically, with the aim of generating one or few constructions on which there is substantial consensus." (Guba, 1990, p. 27). This implies that interpretive inquiry encompasses both a process of deconstruction (i.e., disassembling of individual constructions) and a process of reconstruction (i.e., the generation of common consensual

constructions) (Lincoln et al., 2011). The inquiry process is therefore a sense-making activity between the researcher and the research participants, one from which findings are considered as constructions that result from the interaction between the two (Lincoln & Guba, 2013).

Thus, the aim of constructivist/interpretive inquiry is the achievement of understanding of individuals' constructions by means of reconstruction or refinement of those constructions (Lincoln & Guba, 2013). The inquiry process is understood as a conscious and systematic effort by the researcher and the research participants in order to advance towards a more informed construction about a particular phenomenon. The researcher does not simply embrace or reproduce what research participants' construe; rather, the researcher learn from and interpret the constructions participants initially bring to the inquiry process, and attempt to reconstruct its shared meanings (Lincoln et al., 2011). At the same time the researcher also acknowledges that he/she would never know exactly what is occurring "in their minds" (Charmaz, 2006). In this sense, the researcher's role during the inquiry process is that of an interpreter of participants' constructions.

Belief

"The question of belief is one of the toughest philosophical questions which humans have ever encountered." (Bogdan, 1986a, p. 13). Since Plato, the concept of belief has been the object of multiple treatises, particularly in epistemology, philosophy of mind, and cognitive science. However, is seems that a general agreement regarding the definition of belief has not yet been achieved (Ichikawa & Steup, 2013; Schwitzgebel,

2011; Zimmerman, 2007). Hence, the present subsection is not, by any means, an attempt to present a conclusive definition of belief, nor to present a comprehensive review of the work that has been done around it. The goal of this section is to provide a necessary demarcation of the concept of belief in the context of the present study, in order to facilitate an understanding of the phenomenon investigated.

Next is a glossary of terms that are used throughout this subsection (e.g., propositions, attitudes). These terms or concepts are usually found in the philosophical and psycho-educational literature under different connotations, hence it is necessary to specify how they are here defined. Subsequently the researcher provides a brief description of some major contemporary philosophical approaches to belief and current issues regarding its structural and functional configuration, followed by the working definition of belief used for the present study.

Glossary of Terms

- State of Affairs: Refers to how things actually are in the world. It is "an aspect or feature of the world as it is." (Sayre, 1997, p. 147).
- Proposition: Whatever a complete sentence expresses. In other words, a proposition refers to the meaning or content embodied in a set of words which syntactic form contains at least a subject and a predicate (Schwitzgebel, 2011). For example, if the sentences, "Colombia is beautiful" and "Colombia es hermosa (trans. Spanish)" mean the same thing, they therefore express the same proposition.

- Attitude: Generally understood as a mode of address toward something, such as propositions (Sayre, 1997). For example, in the expression, "I believe Colombia is beautiful" the word "believe" represents a mode of addressing the proposition "Colombia is beautiful".
- Cognitive Attitude: An attitude that is mental and intentional in character; that is, a private internal state in the mind of the individual that is oriented toward something. The intentional component shall not be understood in the common usage as deliberatively or purposefully, but rather as "being about something" (Sayre, 1997, p. 26).
- Propositional Attitude: A cognitive attitude oriented towards a proposition (Schwitzgebel, 2011). Propositional attitudes have three components: a) a subject, b) cognitive attitude, and c) a propositional object. Accordingly, in the previous example there is a subject (I) who holds a cognitive attitude (believe) towards a propositional object (Colombia is beautiful).

Contemporary Philosophical Approaches to Belief

Most contemporary philosophers (with the exception of eliminativists and some instrumentalists) define beliefs as propositional attitudes (Bogdan, 1986a, 1986b; Ichikawa & Steup, 2013; Schwitzgebel, 2011; Wedgwood, 2002). In this sense, a belief is generally thought as a cognitive attitude oriented toward a propositional object. However, there is debate regarding the structural and functional elements of beliefs (e.g., their mental formatting, its relation to behavior and cognition), and how the configuration of

those elements make beliefs different from other cognitive attitudes that are also thought to be oriented toward propositional objects.

Representationalists (e.g., Dretske, 1986; Fodor, 1981, 1990; Sperber, 1997) generally define beliefs as mental representations of propositions stored in the individual's mind or brain (i.e., belief box), and which may have some role in the production of behavior. According to this approach to beliefs, an individual believes in a proposition only if he/she has a mental representation of that proposition stored in his/her mind (Bogdan, 1986a). Some representationalists also assume that beliefs are stored in the mind in some sort of internal language of thought (e.g., Fodor, 1990), and therefore their representational structure is purely linguistic. Others, however, have argued that beliefs are organized in the mind in a map-like configuration, and can be composed also of pictorial elements and not only linguistic ones (e.g., Armstrong, 1980). With the exception of Drestke (1986), most representationalists generally assume that the content of a belief depends on things going on inside the individual's head, but it does not necessarily depend on the content of other beliefs or cognitive attitudes. In this sense, most representationalists hold an internalist view regarding the content of belief (Schwitzgebel, 2011).

On the other hand, dispositionalists (e.g., Audi 1972; Schwitzgebel, 2002) and interpretationists (e.g., Davison, 1984, Zimmermann, 2007) reject the representationalist view of belief as having internal representational structure, instead focusing on patterns of actual and potential behavior. For the dispositionalist, to believe in something is to have some sort of behavioral disposition towards a proposition. In other words, individuals' actions are considered as unambiguous evidence of their beliefs in a certain

proposition. Interpretationists further argue that beliefs are defined only according to those behaviors that can be interpretable by an outside observer. In this sense, an outside observer can attribute a belief to an individual when she/he is able to predict how the individual will behave accordingly to that belief (Zimmermann, 2007). According to Schwitzgebel (2011), both approaches to belief have been widely criticized on the grounds that there are many cases in which the connection between beliefs and behavior is somewhat ambiguous. For instance, a paralyzed person might not be able to produce any observable behavior but still has beliefs, or some individuals may decide not to behave accordingly to what they believe and keep their beliefs private in particular social circumstances (Gilbert, 1987; Wray, 2001).

A fourth major approach is functionalism. According to this approach, beliefs are mental states defined not only by their internal structure (as representationalists) or patterns of actual and/or potential behavior (as dispositionalists/interpretationists), but by its causal relation to behavior and other mental states (Schwitzgebel, 2011). To believe in something is thus to be in a cognitive state capable of causing some behavioral or cognitive changes. In other words, beliefs are not represented by an observable behavior or a linguistic structure, but play a functional, active role in the production of the individual's cognition and behavior (Bogdan, 1986a). For example, from a functionalist perspective, if an individual believes that effective teachers are always professionally dressed, and assuming that he/she wants to be an effective teacher, that belief will thus directly influence the way he/she dresses. In this case, his/her belief is defined in terms of the effect that it has in the way he/she dresses. According to Bogdan (1986b), although this particular approach to belief is perhaps the most widely accepted by contemporary

philosophers, “it fails to identify and explain (…) the conditions which shape the belief function, that is, the conditions in which a content-encoding mental form comes to play a cognitive or behavioral role and thus becomes a belief.” (p. 149).

Currently there are various issues regarding the structural and functional configuration of beliefs, resulting in substantial debate among philosophers. According to Schwitzgebel (2011), one of these issues has to do with whether beliefs can be defined as occurrent or dispositional mental states. In this sense, philosophers have different views about whether beliefs are transitional and occur at one point in time (e.g., Nahomi believes Felipe is washing the dishes), or whether they endure and are prone to occur at different points in time (e.g., Nahomi believes Felipe washes the dishes). For example, representationalists argue that beliefs can be mentally represented as dispositional states, but when activated or deployed through reasoning they become occurrent (Armstrong, 1980). Others argue that a belief “is not a mere disposition, nor an enduring state of some sort, let alone a mere stored representation (…) To have a belief is to manufactured it of fix it.” (Bogdan, 1986b, p. 150). According to Bogdan (1986b), a belief is thus a mental attitude that is constantly being updated by the integration of new information. In this sense, beliefs are manufactured incrementally.

Closely related to the previous issue is whether beliefs are implicit, explicit, or both (Bogdan, 1986a; Lycan, 1986; Schwitzgebel, 2011). Representationalists generally argue that occurrent beliefs are explicit and their content is actually present in the mind of the individual, whereas dispositional beliefs are often implicit (Sayre, 1997). Others have suggested that beliefs are not occurrent, explicit mental states, but rather always in tacit,

dispositional form. According to Lycan (1986), “beliefs are not happenings” (p. 63); occurrent, explicit beliefs are no different than episodic, explicit judgments.

A third issue is whether individuals can believe in a proposition with different degrees of confidence or certainty (Bogdan, 1986a; Schwitzgebel, 2011). Some philosophers are more inclined to the notion that a belief is something absolute, an all-or-nothing notion (Bogdan, 1986b; Dretske, 1986). Others, on the contrary, argue that beliefs are probabilistic in nature (Sayre, 1997). For example, functionalists are more inclined to the former notion because in order for a belief to play a functional role in behavior and cognition it is more appropriate to treat it as certain or true (Schwitzgebel, 2011). On the contrary, dispositionalists and interpretationists would argue that the more or less an individual is willing to act in certain way or the more or less recurrent is the pattern of behavior, the more or less confident he/she is in having such-and-such belief (Davison, 1984; Schwitzgebel, 2002).

Finally, there is debate related to the content of beliefs. For example, philosophers disagree on whether the content of beliefs depends on the content of other beliefs (Bogdan, 1986a; Schwitzgebel, 2011). From an atomistic perspective (as with the representationalists) the content of a belief does not depend on the content of other beliefs, and so individuals who acknowledge the same sentence or proposition will have the same belief (Fodor, 1981). On the other hand, from a holistic perspective the content of every belief depends largely on the content of other related beliefs, and so two individuals will rarely have the same belief (Schwitzgebel, 2011). Other debate around the content of beliefs is whether it depends solely on internal mental properties (i.e., internalist perspective, Fodor, 1990; Sperber, 1997) or could also depend on the context

in which beliefs are formed (i.e., externalist perspective, e.g., Anderson, 2002; Hacking, 1999; Putnam, 1973). According to an externalist perspective, factors external to the mind shape the contents of human thoughts, beliefs, and speech. In this sense, linguistic conventions and social practices may have consequences on what people believe, which suggests that the notion of belief is not purely cognitive or psychological, but also social (Bogdan, 1986a). On the other hand, from an internalist perspective the content of beliefs is thought to be independent of the context and is constrained by internal structural configurations in the mind (Armstrong, 1980; Fodor, 1990).

Towards a Working Definition of Belief

As stated before, a cognitive attitude is a private internal state in the mind of the individual that is oriented toward something. In resonance with the theoretical framework chosen for the present study, cognitive attitudes shall also be understood as constructions. Consequently, they are constrained by the ontological, epistemological, and methodological assumptions described in the first section of this chapter.

Based on the previous review of contemporary philosophical approaches to belief, this study defines beliefs as cognitive attitudes (i.e., constructions) that are oriented toward propositional objects (Bogdan, 1986a, 1986b; Ichikawa & Steup, 2013; Schwitzgebel, 2011; Wedgwood, 2002). Given that cognitive attitudes are regarded as constructions, beliefs shall be also regarded as such. This definition of beliefs, although appealing to the theoretical framework chosen for the present study, is incomplete and somewhat problematic. For instance, knowledge is a cognitive attitude that can also be regarded as a construction. In this sense, what then makes a belief distinct from

knowledge? More precisely, how could we determine that the constructions we are attempting to investigate are individuals' actual beliefs and not knowledge that they might have constructed regarding a particular phenomenon? In order to demarcate the concept of beliefs from other cognitive attitudes, particularly from knowledge, this study proposes a definition of beliefs based on Sayre's approach to cognitive attitudes (Sayre, 1997), as well as some of the assumptions found in contemporary philosophical approaches to belief that can be compatible with a constructivist/interpretivist framework.

Demarcating Belief

Although no philosophical analysis of knowledge has been widely accepted in the twentieth century, the most common framework for analyzing knowledge is that knowledge is a justified true belief (Ichikawa & Steup, 2013). In other words, knowledge is regarded as a true belief "backed up" by appropriate justification. According to Sayre (1997), there is a fundamental problem with this framework; basically, that knowledge is considered a subtype or form of belief. This problem tracks back to the assumption that all cognitive attitudes are propositional in character, and therefore an individual could hold different cognitive attitudes toward the same propositional object. Under this assumption, all cognitive states have three independent components: a) subject, b) cognitive attitude, and c) propositional object. For example, the sentence "Nahomi believes that Felipe washes the dishes" involves a subject (Nahomi), a cognitive attitude (believes), and a propositional object (Felipe washes the dishes). Since these elements are independent form each other, Nahomi could hold different cognitive attitudes in regard to the proposition "Felipe washes the dishes". In this sense, it could also be said that,

"Nahomi knows that Felipe washes the dishes", which would only imply that now she has appropriate reasons to justify the truth-value of that proposition.

Sayre (1997) proposed that, "certain important classes of cognitive attitudes [such as knowledge] do not take propositional objects, but are directed toward *states of affairs* instead [emphasis added]." (p. 7). The author suggests that there are two major types of cognitive attitudes: a) attitudes of propositional stance (or attitudes of stance, such as beliefs), which individuals take toward propositional objects; and b) attitudes of cognitive access (or attitudes of access, such as knowledge), which individuals take toward actual states of affairs. These two types of cognitive attitudes are defined according to two criteria. The first criterion (Criterion I) refers to whether a cognitive attitude can be appropriately characterized in terms of truth or falsehood, and the second (Criterion II) refers to whether asking "Why?" or "How?" questions can be more appropriate in probing or assessing a cognitive attitude. In other words, "Criterion I treats the intelligibility of assigning dimensions of correctness to certain cognitive attitudes, while Criterion II treats the manner in which such attitudes are criticized." (Sayre, 1997, p. 18).

One typical feature of attitudes of stance is that they are characterized in terms of truth and falsehood, and in this sense they respond positive to Criterion I (Sayre, 1997). Since propositions could be treated as true or false (Bogdan, 1986b; Schwitzgebel, 2011), therefore cognitive attitudes that are directed toward propositional objects (i.e., attitudes of stance) can be judged in terms of truth or falsehood. In this sense, beliefs, as attitudes of stance, shall be judged in terms of truth or falsehood. For example, if the proposition "effective teachers are passionate about teaching" is true, and, if Nahomi believes that effective teachers are passionate about teaching, then Nahomi holds a true belief. In other

words, she truly believes that effective teachers are passionate about teaching. If on the other hand the proposition happens to be false, Nahomi holds a false belief, meaning that she falsely believes that effective teachers are passionate about teaching.

Something different occurs with attitudes of access, such as knowing, which are instead directed towards actual states of affairs. Unlike propositions, states of affairs (i.e., how things actually are in the world) cannot be treated in terms of truth or falsehood. Rather, states of affairs are either the case or not the case; they are, or they are not (Sayre, 1997). For example, if Nahomi goes to the beach and claims that she knows the sun is shining, whereas in fact that is not the case, it is not logical to say that she falsely or incorrectly knows that the sun is shining. Instead, it should be said that Nahomi failed to know that the sun is shining. In this sense, there is no such thing as "true" or "false" knowing. One either knows or fails to know an actual state of affair. Since states of affairs, unlike propositions, are neither true nor false, knowing cannot be evaluated in terms of truth-values. Nahomi's error is hence not a matter of "false knowing", but rather a matter of mistaken recognition of what is in fact the case (i.e., that the sun is not shining). Therefore, attitudes of access respond negatively to Criterion I since they do not admit qualification in terms of truth and falsehood, or correctness and incorrectness (Sayre, 1997).

In regards to Criterion II, attitudes of stance, such as believing, are usually probed by asking "Why?" questions, whereas attitudes of access, such as knowing, are usually probed by asking "How?" questions (Sayre, 1997). Continuing with the previous examples, let us suppose that Nahomi says she believes effective teachers are passionate about teaching under conditions that make her belief confusing or problematic. Taking

her word to be sincere, a way to evaluate her belief is to ask, “Why do you believe effective teachers are passionate about teaching?” It would be rather unusual to ask her, “How do you believe effective teachers are passionate about teaching?” It might be acceptable to ask Nahomi, “How could you believe effective teachers are passionate about teaching?”, but this is just another way, belittling perhaps, to ask her *why* she believes that effective teachers are passionate about teaching. Or, it would also be acceptable to ask, “How did you arrive at that belief?”, but that also would be almost the equivalent of asking her *why* she believes effective teachers are passionate about teaching. According to Sayre (1997), the importance of asking “Why?” with respect to the stances individuals take toward propositional objects is that individuals expect others to hold those stances on the basis of reasons. Therefore, in querying others’ attitudes of stance, individuals are asking whether it might be appropriate to hold a particular attitude of stance. On the other hand, in order to probe whether others have gained some form of cognitive access regarding a state of affair, individuals commonly ask “How?” questions. For example, if Nahomi claims that she knows the sun is shining, the appropriate question to ask her would be, “How do you know the sun is shining?” It would be rather unusual to ask her, “Why do you know (i.e., have access to) the sun is shining?”

Knowledge is not regarded as a subtype or species of belief. Rather, these two cognitive attitudes are different modes of address directed toward completely different objects. Knowledge is a mode of cognitive access directed toward states of affairs, whereas belief is a mode of cognitive stance directed toward propositional objects.

Structural and Functional Assumptions

A belief is a mental construction. Therefore, a belief is assumed to be the result of an act of construal (or sense-making effort) in the form of a "coherent, articulated set of constructs – a pattern or web of constructs and their interconnections – that makes sense of some aspect (some 'chunk') of the constructor's surround (…), [and allow] the synthesis of personal experience and the communication of that experience to others." (Lincoln & Guba, 2013, p. 47-51). Moreover, a belief should be defined according to its meaning (i.e., the content it represents) and its level of sophistication (i.e., its level of complexity and scope), and treated as a cognitive attitude that is open to continuous reconstruction or refinement. It is also assumed that beliefs can be developed jointly by individuals having some level of shared experience, or learned from others through vicarious experiences or inherited from culture and socialization practices, and they can be studied by means of an hermeneutical/dialectic process (Lincoln & Guba, 1985, 2013).

A belief is usually in dispositional form. While beliefs might be constructed on particular occasions, they can be sustained over long periods of time once the immediate occasion in which they were constructed is past (Armstrong, 1980; Sayre, 1997). According to Sayre (1997), "sustained belief is a disposition to reactivate the causal influence exercised by that particular attitude at its initial occurrence (…) [Thus], the disposition involved in sustained belief is a tendency to renew the assent by which the belief in question was first constituted [i.e., constructed]." (p. 42). For example, Nahomi is a teacher education student who believes that effective teachers constantly monitor students' learning. Her belief, when initially constructed, was episodic (i.e., occurrent), but she continues believing in that proposition as she goes through the teacher education

program. Her continued belief in that proposition was not episodic, but rather dispositional, in the sense that she continuously renewed the cognitive stance that she initially constructed. Closely related to this assumption is that a belief can be held both explicitly and implicitly. A belief is explicit when is initially constructed and when later reactivated or renewed, and it is implicit when is sustained in its dispositional form. In this sense, beliefs are usually implicit.

A belief can be held with different levels or degrees of certainty (Bogdan, 1986b; Sayre, 1997; Schwitzgebel, 2011). Sayre argued that "being certain" cannot be equated as a cognitive attitude, or with knowing as some scholars have suggested (Ayer, 1956; Chisholm, 1957, as cited by Sayre, 1997). Being certain is not something that we do (such as believing), but rather something that we are. To be certain is "a matter of having reached a certain level of confidence in maintaining a propositional attitude." (Sayre, 1997, p. 44). On the other hand, being in doubt represents the other extreme of the confidence dimension of propositional attitudes. Following the previous example, let us say that Nahomi believes effective teachers constantly monitor students' learning. She could be more or less confident on her belief. At the highest level of confidence, it could be said that she is certain or completely sure that effective teachers constantly monitor students' learning; whereas at lower levels of confidence she is less sure, until gradually becoming completely doubtful and therefore may decide to abandon her initial belief.

Beliefs can be shaped by factors external to the mind (Anderson, 2002; Bogdan, 1986b; Boghossian, 2001; Gilbert, 1987; Hacking, 1999; Putnam, 1973). From a constructivist/interpretive perspective, beliefs can be learned from others through vicarious experiences or inherited from culture and socialization practices. Therefore, the

notion of belief cannot be purely cognitive or psychological, but is also social (Bogdan, 1986b). The implication of this assumption is that there may be social and cultural factors that have consequences on what individuals believe. Beliefs, in this sense, can be thus socially constructed (Hacking, 1999). According to Boghossian (2001), to say that beliefs are socially constructed is to say that they can be dependent on aspects of the culture and social lives of individuals (e.g., social values). As Anderson put it, "if culture were different, the beliefs we held would be different from the way they are." (Anderson, 2002, p. 69). For example, Nahomi's belief that effective teachers care about their students could have been shaped by the fact that in the culture she grew up being caring is a desirable social value.

A Working Definition of Belief

Below is a list of tenets or principles that, when taken together, enclose the working definition of belief that was used for the present study.

- Tenet 1: Beliefs are cognitive attitudes of propositional stance (or attitudes of stance) that can be characterized in terms of truth and falsehood (Sayre, 1997).
- Tenet 2: Beliefs are constructions, and therefore are constrained by constructivist/interpretive ontological, epistemological, and methodological assumptions (Lincoln & Guba, 1985, 2013).
- Tenet 3: Beliefs can be appropriately probed or assessed by asking "Why?" questions (Sayre, 1997).

- Tenet 4: Beliefs are usually in dispositional and implicit form; they can be implicitly sustained over long periods of time once the immediate occasion in which they were constructed is past (Armstrong, 1980; Sayre, 1997).
- Tenet 5: Beliefs can be hold with different levels of certainty or confidence (Bogdan, 1986b; Sayre, 1997; Schwitzgebel, 2011).
- Tenet 6: Beliefs can be shaped by factors external to the mind, and in that sense can be socially constructed (Anderson, 2002; Bogdan, 1986b; Boghossian, 2001; Gilbert, 1987; Hacking, 1999; Putnam, 1973).

Teacher Beliefs

Around four decades ago, research on teaching and teacher education began to shift from a product-process framework concerned with teachers' personal traits and behaviors, towards the study of teachers' thought processes (Borko, Liston, & Whitcomb, 2007; Cochran-Smith, 2004; Darling-Hammond, 2006). Since then, research on teacher beliefs has made important contributions to our understanding of preservice and inservice teachers' thinking and its implications for teaching and teacher preparation (Clark, 1988; Fang, 1996; Mansour, 2009; Nespor, 1987; Pajares, 1992; Pintrich, 1990; Richardson, 2003). Educational researchers have suggested that teachers hold beliefs about students and their learning, the role of schooling, the curriculum, the content they teach and how they teach it, and that these beliefs are related to how and what they learn from teacher education and professional development programs, as well as their pedagogical practices (e.g., Clark & Peterson, 1986; Hashweh, 1996; Kember, 1997; Nisbett & Ross, 1980; Porter & Freeman, 1986).

Topics in Research on Teacher Beliefs

Teacher Belief vs. Teacher Knowledge

An issue of concern in the literature on teacher beliefs is regarding the distinction between teachers' knowledge and beliefs (Calderhead, 1996; Ernest, 1989; Nespor, 1987; Pajares, 1992; Richardson, 1996; Savasci-Acikalin, 2009). For example, Nespor (1987) suggested that teachers' beliefs are assumptions about the existence of social and physical entities that cannot be affected by persuasion and are beyond the teachers' control. An important aspect of teachers' beliefs noted by Nespor and others (Ernest, 1989; Nisbett & Ross, 1980) is that, different from teachers' knowledge, they have strong emotional and evaluative components. Moreover, teachers use their beliefs in ill-structured situations to define goals and tasks, whereas they use their knowledge when in well-structured situations (Nespor, 1987). Nespor also argued that since beliefs are not open to evaluation (contrary to knowledge), they do not require consensus regarding their appropriateness.

Researchers have further suggested that teachers' beliefs are in charge of the formation of their knowledge structures and therefore have a more powerful effect over their decisions in the classroom (Ernest, 1989; Pajares, 1992; Richardson, 1996). This notion of belief corresponds with the traditional philosophical definition of belief as a necessary condition for knowledge (Ichikawa & Steup, 2013; Schwitzgebel, 2011; Wedgwood, 2002). Contrary to this notion, Griffin and Ohlsson contend that knowledge is rather a necessary condition for belief. Or as they explicitly put it, "knowledge is the only foundation for belief." (Griffin & Ohlsson, 2001, p. 365). In a similar way, Alexander, Schallert, and Hare (1991) argued that beliefs are a subcategory of

knowledge. According to Alexander and colleagues, knowledge "encompasses all that a person knows or believes to be true, whether or not it is verified as true in some sort of objective or external way." (Alexander et al., 1991, p. 317).

According to Savasci-Acikalin (2009), other common distinctions between beliefs and knowledge in the literature of teacher beliefs are: a) beliefs refer to suppositions, commitments, and ideologies, whereas knowledge refers to factual propositions; b) beliefs do not require a truth condition, whereas knowledge must satisfy the truth condition; c) beliefs are based on evaluation judgments, whereas knowledge is based on objective facts; d) beliefs are episodically stored, whereas knowledge is stored in sematic networks; and e) beliefs are static, whereas knowledge often change.

Pajares (1992) pointed that the problem associated with this distinction usually resides on the difficulty in determining where the precinct of knowledge ends and that of belief begins, or vice versa. For centuries, the distinction/relationship between notions of knowledge and belief has been the business of philosophers. As Bogdan (1986a) argued, they have been perhaps the only scholars genuinely concern with issues regarding knowledge and belief. Surprisingly, however, there is little reference in the educational literature on teacher beliefs regarding previous work done by philosophers. Moreover, Zimmermann (2007) suggests that most of the models about the nature of beliefs that has been proposed outside the realm of philosophy are generally constructed around the neo-Cartesian, theory-theory approach to belief, which is based on tacit assumptions of common sense psychology reflected in the naïve use of the term. Although philosophers still struggle with various issues related to knowledge and belief, it might be

advantageous for the field of teacher beliefs to draw from contemporary philosophical literature to address this issue.

Teachers' Beliefs, Behavior, and Cognition

Some of the most relevant findings in the field of teacher beliefs are related to the relationships between teachers' beliefs and their behavior and cognition. Scholars have suggested that teachers' beliefs have important implications for their practices in the classroom (Clark & Peterson, 1986; Fenstermacher, 1979; Schoenfeld, 1983). One of these implications is related to how teachers define instructional tasks. According to Pajares (1992), "beliefs are instrumental in defining tasks and selecting the cognitive tools with which to interpret, plan, and make decisions regarding such tasks; hence they play a critical role in defining behavior and organizing knowledge and information." (p. 325). Hence, teachers' beliefs can be thought to play a role in defining teaching tasks and organizing the knowledge and information that are used for those tasks (Nespor, 1987). Researchers have further suggested that teachers' beliefs influence their perceptions and judgments, and in turn their decisions in the classroom (Ernest, 1989; Fang, 1996; Feiman-Nemser & Floden, 1986; Pajares, 1992; Tabachnick & Zeichner, 1984). For example, Tabachnick and Zeichner (1984) suggested that teachers' beliefs are socially defined interpretations of experience that guide their perceptions of teaching and learning and subsequently their behaviors in the classroom. Fang (1996) further argued that teachers' beliefs affect their planning and decisions, as well as their teaching practices.

However, there is still debate in the field regarding whether teacher beliefs are consistent with the practices. Some researchers have found that there is some level of

dependability between teachers' beliefs and their instructional practices (Brickhouse, 1990; Hashwee, 1996; Kang, 2008; Mangano & Allen, 1986; Stuart & Thurlow, 2000). For example, Hashwee (1996) conducted a study with 35 Palestinian teachers in order to explore the relationship between their epistemological beliefs (about learning and knowledge) and their teaching strategies. Hashwee found that teachers who have constructivist views about learning (e.g., students construct new knowledge based on previous knowledge) also tend to use constructivist pedagogical strategies (e.g., teaching for conceptual change). Similarly, Kang (2008) conducted a study with 23 preservice teachers enrolled in a secondary methods course at a public university in the United States. The purpose of the study was to understand how secondary preservice teachers' beliefs about science could be translated into pedagogical goals and actions. After collecting an analyzing data from participants' essays on their past science learning history, classroom observations, lesson plans, and a self-video reflection on teaching, Kang found that preservice teachers who believe in science as tentative and evolving have the goal of encouraging their students to question scientific explanations. These results suggest is that teacher practices are directly shaped by their beliefs about teaching and learning. Thus, if a teacher believes that teaching should be about transmitting knowledge to the students so that they can copy that knowledge, then her/his pedagogical actions in the classroom should be directed toward knowledge transmission and promoting memorization strategies (Fang, 1996).

Others have suggested that teachers' beliefs sometimes, but not always, seem to be related to their behavior (Bayer & Davis, 2008; Jorgensen, Grootenboera, Nieschea, & Lerman, 2010; Raymond, 1997; Davis, Konopak, & Readence, 1993). For example,

Davis et al. (1993) conducted a study to examine the relationship between two teachers' beliefs about reading and their instructional decisions as they planned and execute a teaching lesson. They used in-class observations, field notes from the teachers, and interviews to look for common patterns of beliefs and behaviors between and within participants. Davis and colleagues found that teacher decisions in the classroom were not related to their beliefs about reading, but were rather influenced by the decisions of school principals and other teachers, as well as by their need to follow state and local district decrees (Davis et al., 1993). In a case study conducted by Bayer and Davis (2008) to explore how a third-year elementary teacher's beliefs about science instruction were related to her instructional practices, the researchers concluded that even though teachers might believe that fostering students' argumentations is key for both teachers and students, and agree that instruction should provide opportunities for students to develop argumentative skills, they might not consistently consider argumentation as a goal in their teaching.

A possible source of inconsistency of findings could be related to issues of measurement, specifically construct and ecological validity issues. One recurrent method of inquiry in teacher thinking has consisted of using simulated cases or vignettes of learning and teaching episodes (Shulman, 1992). In a typical case, certain features or cues of the learning or teaching episode are highlighted and the teacher is asked to make judgments about each feature. Then, responses are classified in the form of a Likert scale continuum and analyzed using different statistical methods (e.g., ANOVA, multiple regression equations). According to Fang (1996), there is an ecological validity problem associated with this type of procedure. Basically, what the data from these studies reflect

is a simulation of teachers' beliefs about specific variables relevant to teaching, rather than a representation of teachers' actual beliefs. Another method of inquiry consists in presenting participants a series of scenarios about the domain of interest and then asked them to indicate which scenarios best characterize their beliefs about a teaching and/or learning in that particular domain (Clark & Peterson, 1986; Hashwee, 1996). The researcher then labels teachers' selections generally using psycho-educational constructs (e.g., constructivist, realist) that have been previously predetermined to correspond to each particular scenario. Similarly to the previous method, this method produces data representing hypothetical situations; participants' responses may only reflect what they would do rather than what they may actually do in actual instructional settings.

Stability vs. Change

Another topic of debate in the literature is related to the stability of teachers' beliefs (Ben-Peretz, Mendelson, & Kron, 2003; Lasley, 1980; Nespor, 1987; Nisbett & Ross, 1980; Pajares, 1992; Stuart & Thurlow, 2000). For example, Nisbett and Ross (1980) suggested that teachers' beliefs are constrained by what they called, the perseverance phenomenon of theory maintenance. According to this phenomenon, once teachers have formed a belief they tend to build causal explanations around that belief in order to protect it from been confronted. The longer a teacher holds a belief, the harder it will be for him/her to change it. Therefore, beliefs formed earlier in their lives tend to be very powerful and are highly resistant to change, even when confronted with convincing evidence. Nespor (1987) further suggested that since teachers' beliefs have an important functional explanatory role, they could not be easily changed just by objectively

confronting them with empirical evidence. To show teachers that their beliefs are incorrect in different circumstances does not necessarily ensure that they will abandon their beliefs. Similarly, Pajares (1992) noticed that teacher beliefs "are formed early and tend to self-perpetuate, preserving even against contradictions caused by reason, time, schooling, or experience." (p. 324).

Somewhat contrary to this view, Lasley (1980) argued that although beliefs can endure unaltered for long periods of time they could change when deliberately challenged at a conscious level. Similarly, Stuart and Thurlow (2000) suggested that teacher beliefs could change when challenged by new experiences in which they can no longer play an explanatory role. Moreover, others have suggested that school and instructional contexts could significantly impact teachers' beliefs (Ben-Peretz, Mendelson, & Kron, 2003).

From a constructivist/interpretive perspective, mental constructions (such as beliefs) are open to continuous refinement as individuals encounter new experiences and attempt to make sense of them (Lincoln & Guba, 1985, 2013). This implies that the demands of new experiences teachers encounter during their lives can shape their beliefs about teaching, learning, and education in general. From a phylogenetic point of view, if beliefs are thought to have an instrumental and adaptive function (Nisbett & Ross, 1980; Pajares, 1992), it is counterintuitive to think that they will rarely be open to change. From an ontogenetic point of view, just as other individuals reconstruct or reframe their beliefs and other cognitive structures as they go through different stages in life (Miller, 2011), teachers could also change or adapt their beliefs as they engage in new educational and professional experiences, either in terms of their meaning or their level of sophistication, or both.

Preservice Teachers' Beliefs

Although historically most studies have focused on inservice teachers' beliefs, more recently there has been a growing interest on investigating preservice teachers' beliefs and their implications for teacher preparation (Anderson & Bird, 1994; Decker & Rimm-Kaufman, 2008; Holt-Reynolds, 2000; Pajares, 1992, 1993; Pajares & Bengston, 1995; Richardson, 2003; Schmidt, 2012). Research has shown that preservice teachers generally enter teacher preparation programs with simplistic or naïve beliefs about teaching and learning (Clark, 1988; Conner, Edenfield, Gleason, & Ersoz, 2011; Pajares, 1993; Stuart & Thurlow, 2000). They usually have optimistic beliefs about their role as teachers (Florio-Ruane & Lensmire, 1990; Kennedy, 1997; Weinstein, 1990) and the role of students (Decker & Rimm-Kaufman, 2008, and tend to belief that the more important attributes to successful teaching are those they perceive as their own (Pajares, 1992).

According to Pajares (1993), preservice teachers' beliefs are well established by the time they get to college, and play an important role in their perceptions of and dispositions to the knowledge and experiences they come across during formal teaching training programs. From the time of their early experiences as students in the school years, preservice teachers begin to construe their own beliefs regarding different aspects of teaching (Calderhead & Robson, 1991; Lortie, 1975). Preservice teachers can be considered as "insiders" of their profession (Pajares, 1992); they have been exposed to and had developed their own beliefs about the profession long before receiving formal training in college. This might explain why preservice teachers' beliefs about different aspects of teaching are often highly resistant to change and persist during teacher

preparation, sometimes continuing basically unaffected in their professional practice (Pajares & Bengston, 1995; Zeichner, 1986). As Pajares (1992) pointed:

> "The classrooms of colleges of education, and the people and practices in them, differ little from classrooms and people they have known for years. Thus, the reality of their everyday lives may continue largely unaffected by higher education, as may their beliefs (…) Evaluations of teaching and teachers that individuals make as children survive nearly intact into adulthood and become stable judgments that do not change, even as teacher candidates grow into competent professionals." (p. 323-324).

Scholars have further suggested that the homogeneity of preservice teachers' prior educational related experiences could result in stereotypical beliefs pertaining to education (Feiman-Nemser & Remillard, 1996; Lortie, 1975). According to Stuart & Thurlow (2000), differences in preservice teachers' beliefs about education might therefore be a direct consequence of differences in experiences in educational contexts. For instance, Hancock and Gallard (2004) conducted a study to investigate the impact of K-12 field experiences on preservice science teachers' beliefs about teaching and learning. Participants (N=16) were enrolled in a methods course in which they were required to complete 70 hours of field experience in K-12 schools. The researchers asked participants to complete a series of drawings reflecting their beliefs about teaching and learning, and to reflect on the relationship between their beliefs and the field experiences they had during the semester. The researchers concluded that the field experiences preservice teachers encounter during teacher education challenged their beliefs about instruction, changing from teacher-center to student-centered beliefs (Hancock & Gallard, 2004). As previously discussed, it seems counterintuitive to assume that regardless of the diverse array of educational experiences preservice teachers could encounter in their years as students, they manage to grow up maintaining unaltered

beliefs about teaching, even when they become experienced professionals. Considering the overwhelming amount and types of educational-related experiences schooled individuals encounter throughout kindergarten, elementary, middle and high school (at least in the Western Hemisphere), it might be counterproductive for future research to assume that their beliefs would not suffer any important alterations at the meaning and complexity levels by the time the get to college.

Preservice teachers' beliefs are a fundamental psychological construct to teacher education (Pintrich, 1990) and have the potential to hinder the effects of teacher training programs (Nespor, 1987; Shavelson, 1983). Therefore, "research on the entering beliefs of preservice teachers would provide teacher educators with important information to determine curricula and program direction." (Pajares, 1992, p. 328). Using qualitative methodologies to explore how preservice teachers construe their beliefs about different aspects of education could provide more opportunities for understanding the implications of those beliefs for teacher education and teaching decision-making (Munby, 1982, Pajares, 1993; Pajares & Bengston, 1995). Furthermore, it is crucial to acknowledge that preservice teachers bring their own beliefs about different aspects of teacher effectiveness, and that these beliefs could have important implications for how and what preservice teachers learn from teacher education (Brophy & Good, 1976; Clark, 1988; Minor et al., 2002; Murphy et al., 2004).

Preservice Teachers Beliefs about Teacher Effectiveness

Previous studies on preservice teachers' beliefs about teacher effectiveness have found that, in general, preservice teachers tend to consider teacher persona (e.g., caring,

enthusiastic, charismatic) and relationship with students as the most salient characteristics of effective teachers (Minor et al., 2002; Murphy et al., 2004; Ng, Nicholas, & Williams, 2010; Walls, Nardi, von Minden, & Hoffman, 2002; Weinstein, 1989, 1990; Witcher & Onwuegbuzie, 1999). For example, Witcher and Onwuegbuzie (1999) asked 219 preservice teachers to complete a questionnaire in which they had to identify, rank, and define three to six characteristics that they believed are commonly found in effective teachers. The researchers concluded that preservice teachers believe that being enthusiastic about teaching and ethical are more important characteristics of effective teachers than having good classroom and behavior management skills, teaching techniques, and content knowledge (Witcher & Onwuegbuzie, 1999). In a study conducted by Walls et al. (2002) to explore differences and similarities among preservice teachers' (N=30), novice teachers' (N=30), and experienced teachers' (N=30) beliefs about the characteristics of effective teachers, the results reveled that a positive emotional environment between the teacher and students was the most predominant belief among preservice teachers. More recently, Murphy et al. (2004) conducted a study to examine the beliefs about effective teachers and effective teaching across second-grade students (N=60), preservice teachers (N=61), and inservice teachers (N=22). By using a combination of survey, drawing, and interview tasks the researchers found that most preservice teachers (as well as most participants in the other two groups) tended to believe that the most salient characteristics of effective teachers are caring, patient, not boring and polite.

Some of these studies (e.g., Murphy, et al., 2004; Walls, et al., 2002; Weinstein, 1989) have particularly examined whether preservice and inservice teachers hold

different beliefs about teacher effectiveness. For example, in a study conducted by Weinstein (1989) preservice and inservice teachers were asked to complete a questionnaire consisting of open-ended and fixed-respond questions in which they had to identified characteristics of effective teachers as well as their own characteristics as students and teachers. The results from the study suggest that both preservice and inservice teachers tend to emphasize the importance of interpersonal and affective variables (e.g., caring, ability to relate to students, patience), rather than variables related to pedagogical aspects of teaching (Weinstein, 1989). Similarly, Walls et al. (2002) found that even though experienced teachers' beliefs tended to dwell more around the establishment of rules and grading than those of preservice and novice teachers, all three groups perceived the affective role of the teacher (i.e., caring and interactive with students) as the most important characteristic of effective teachers. Murphy et al., (2004) found that even though preservice teachers seemed to be more concerned with classroom management than inservice teachers, majority of participants in both groups believed that effective teacher are usually characterized by strong interpersonal and affective skills (Murphy et al., 2004). Thus, preservice teachers' beliefs about teacher effectiveness may remain relatively stable during their teaching training and later in their work at schools.

Previous studies have indicated that effective inservice teachers do not give a lot of importance to interpersonal and affective variables (e.g., Taylor, Christie, & Platts, 1970). Taylor and colleagues proposed a model of teachers' beliefs about teacher effectiveness encompassing three dimensions: a) teacher classroom behavior and relationships, b) teacher preparatory behavior (including relationships outside of the classroom), and c) teacher professional qualifications. Participants were 58 inservice

teachers who were asked to respond to a series of statements regarding those three dimensions, in terms of their level of agreement. The results reveled that most teachers focused on the dimension of teacher classroom behavior and relationships, in terms of discussion of the content with students, teaching knowledge/facts, and classroom management behaviors (Taylor et al., 1970).

Brown (1974) replicated Taylor and colleagues' study with Scottish teachers using a shorter version of the initial instrument (only items with high loadings on all the factors). Brown found that Scottish teachers do not tend to place greater emphasis in teacher's classroom behavior and relationships, and rather focus on teacher preparatory behavior (Brown, 1974). These findings suggest that there might not be a universal trait of beliefs about teacher effectiveness. A study conducted by Whitman and Lai (1990) with Hawaiian and Japanese teachers reveled that there were marked differences between the beliefs about teacher effectiveness in both groups. In general, Japanese teachers' beliefs were more oriented with praising student responses no matter if they were right or wrong, whereas Hawaiian teachers' beliefs tended to dwell more around the importance of classroom management skills and having control of the classroom. The authors concluded that perhaps teachers' socio-cultural context might influence how they think about effective teaching (Whitman & Lai, 1990).

More recently, Ng et al. (2010) suggested that preservice teachers' beliefs about teacher effectiveness could in fact change during teacher preparation. By using a questionnaire that included 22 Likert-scale items (statements regarding characteristics of effective teachers) and one open-ended question (what makes a good teacher?), they found that even though some beliefs about effective teaching were recurrent across

different points in a teacher preparation program (e.g., good teachers are kind, caring, understanding, and assist their students in their learning), some others did change. Preservice teachers at the beginning of the program and during fieldwork observation tended to believe that an effective teacher is one that is in control of her/his students, whereas some students during practicum perceived effective teachers as those who prevent loss of personal control.

Even though these and other studies have provided important insights into the nature and stability of preservice teachers' beliefs about teacher effectiveness, results clearly suggest that more studies are needed in order to determine whether those beliefs are (or not) stable during teacher preparation, and what implications this might have for the design of teacher education programs. Specifically, there is a need for an in-depth examination of preservice teachers' beliefs about teacher effectiveness using qualitative approaches.

Limitations of Previous Studies

One limitation in previous studies is the use of Likert-scale questionnaires based on statements resembling researchers' views or previous models of teacher effectiveness. Munby (1982) pointed that traditional inventories ask teachers to respond to a list of "beliefs" that may not be relevant to their professional reality. Other researchers have suggested that there is an important ecological validity issue related to this particular type of measures that can constrain our understanding of teachers' beliefs (Fang, 1996; Aikenhead & Ryan, 1992). Hence this might not be the best way to investigate both the nature and developmental trajectory (if any) of preservice teachers' beliefs about teacher

effectiveness. This measurement issue could be avoided by using qualitative methodologies that make possible an in-depth exploration of teachers' thought processes (Connelly & Clandinin, 1986; Munby, 1982).

Moreover, with the exception of Murphy et al. (2004), most of these studies also present an important theoretical limitation. For instance, it is not clear how the researchers conceptually defined and operationalized their object of study (e.g., beliefs, perceptions, conceptions). It is difficult to determine, for example, whether researchers were obtaining information about preservice teachers' understandings of teacher effectiveness theories or about their actual beliefs; or whether researchers were referring to participants' beliefs in terms of internal representational structures of phenomena contained in the mind/brain or a "belief box" (representationalist stance, see Dretske, 1986; Fodor, 1990), or in terms of external behavioral dispositions or patterns of action and reaction pertaining to a proposition (dispositionalist stance, see, Audi, 1992; Schwitzgebel, 2002), or in terms of something else.

Another important limitation is that most of these studies have been carried out with secondary preservice teachers, and very little is known about elementary preservice teachers' beliefs about teacher effectiveness. Research has shown that preservice teachers' educational beliefs tend to differ according to whether they plan to teach at the elementary and secondary school levels (Book & Freeman, 1986; Rimm-Kaufman, Storm, Sawyer, Pianta, & LaParo, 2006). Thus, new studies are needed to investigate the beliefs about teacher effectiveness that elementary preservice teachers bring to teacher preparation programs.

Finally, most of the research done in this area has been disconnected from researcher on teacher effectiveness (Witcher, Jiao, Onwuegbuzie, Collins, James, & Minor, 2008), and has primarily focused on the beliefs of preservice teacher about the characteristics and personal traits of effective teachers. Preservice teachers may also construe believes about other aspects of teacher effectiveness that have not been considered in previous studies (e.g., effective classroom instruction, behaviors of effective teachers), and which could facilitate a richer understanding of their beliefs about teacher effectiveness. Therefore, it could be worthy to draw from different areas of research on teacher effectiveness in order to design future studies.

Teacher Effectiveness

Over the last century, issues related to effective classroom instruction and the interplay between teachers' characteristics and behaviors and student learning have been investigated under the umbrella of research on teacher effectiveness (for thorough reviews, see Barr, 1961; Domas & Tiedman, 1950; Doyle, 1977; Gage, 1972; Harris, 1998; Kyriacou, 1985; Mitzel & Gross, 1956; Porter & Brophy, 1988; Yamamoto, 1963). Systematic research efforts in this field can be traced from the early 1950's, when the American Educational Research Association (AERA) established the first criteria for studying teacher effectiveness based on teacher effects and teacher traits, characteristics, and classroom behavior (Barr et al., 1952). With an assumption that "teaching matters for learning" (Good, Biddle, & Brophy, 1975), the main goal of the teacher effectiveness movement has been to develop an empirically based framework for effective teaching. A framework for effective teaching would help identify factors that influence student

growth and academic achievement, as well as inform teacher educators and policy makers on how to better prepare and evaluate future generations of teachers (Brophy, 1979/2010; Rosenshine, 1976).

Areas of Research on Teacher Effectiveness

Research on teacher effectiveness can be classified around three major areas: a) effective classroom instruction, which refers to instructional and environmental conditions in the classroom (i.e., classroom ecology) that can effectively contribute in fostering student growth and achievement (Brophy & Good, 1986; Kyriacou, 1985; Bryk & Raudenbush, 1988); b) characteristics of effective teachers, which refers to the personal attributes and other characteristics of teachers whom are considered more effective in promoting student growth and academic achievement (Anderson, 2004; Brophy, 2001; Getzels & Jackson, 1963; Ryans, 1961); and c) behaviors of effective teachers, which refers to the specific actions (or instructional processes) that teachers use the classroom and that can directly contribute to student growth and academic achievement (Good, Biddle, & Brophy,1975; Harris, 1998).

Research on effective classroom instruction has focused on developing a coherent explanatory model of how the classroom works, and then use the model to ask questions and interpret answers about teacher effectiveness. According to Doyle (1977), "teacher behaviors, at least as conventionally measured, seldom account for more than 10 percent of the variance in learning outcomes (…) Teacher effectiveness formulations should include both contextual variables and the meanings teachers and students assign to the events and process that occur in classrooms." (p. 187-188). Most of the studies in this

area have been conducted around the dialectical interaction between classroom/school environment and students' learning, and the effect of the structure of classroom tasks on student achievement. The use of structured curriculum and direct, whole class instruction has been found to be one of the most effective instructional methods in relation to students' achievement (Brophy, 1979/2010; Rosenshine, 1983). According to Rosenshine (1983) direct instruction is understood as explicit, step-wise instruction and it has been considered the best method to improve student achievement. Others have further suggested that the quantity and phasing of instruction (Brophy & Good, 1986), a task oriented but relaxed classroom environment (Rosenshine, 1976), and a positive classroom climate (Kyriakides, 2005; Stronge, 2007; Stronge, Ward, & Grant, 2011) have significant effects on students' achievement.

Research on the characteristics of effective teachers was the first stage of inquiry on teacher effectiveness (Doyle, 1977; Harris, 1998; Kyriakides, 2005). Some of the first studies conducted in this area (e.g., Barr, 1961; Getzels & Jackson, 1963; Ryans, 1961) defined teacher effectiveness in terms of the relationship between teachers' personas traits and skills and students' growth and achievement. However, these studies were strongly criticized because there were far disconnected from actual classrooms events and also because their results could not directly shown how teacher characteristics influence students' achievement (Harris, 1998). Recently other scholars have suggested that teacher characteristics do not have a direct influence on students' achievement, but rather mediate or moderate effectiveness (Anderson, 2004; Brophy, 2001; Strong et al., 2011). According to Ozgun-Koca and Sen (2006), some common characteristics effective teachers are: Strong subject knowledge, sound pedagogical preparation, and high overall

academic performance. Moreover, Anderson (2004) indicated that some of the characteristics that have been found to be associated to effective teachers are: a) Professionalism, which refers to teachers' sense of commitment, confidence, trustworthiness, and respect for others; b) reasoning skills, such as analytical and conceptual thinking; c) positive expectations related to their professional development, such as drive for improvement, information seeking, and initiative; d) leadership, which refers to the teacher capacity to be flexible, accountable, and feel passion for learning; and e) the ability to achieve internally and externally imposed goals.

Finally, another area of research on teacher effectiveness has been related to the behaviors of effective teacher (Anderson et al., 1979; Brophy, 1979/2010; Doyle, 1977; Good et al., 1975; Harris, 1998). According to Doyle (1977), this area of research was mainly framed under the process-product paradigm, which formulated teacher effectiveness in terms of the relationship between teachers' classroom behaviors and students' learning outcomes, and was expected to provide practical implications for the development of teacher education content and tools for teachers to improve their instruction. Brophy (1979/2010) indicated that some teacher behaviors that have been proved to be effective for improving students' learning outcomes are to provide extensive content coverage and promote student involvement in the classroom, constantly monitor students' progress, and provide immediate academically oriented feedback to students' after learning activities. Other scholars have further noticed that effective teachers commonly make emphasis on academic goals (Anderson, 2004), know their students and adapt their teaching strategies according to students' needs (Harris, 1998), clearly communicate their expectations to students (Rosenthal & Jacobson, 1968), demonstrate

strong classroom management skills (Anderson et al., 1979), and are thoughtful and reflective on their practices (Porter & Brophy, 1988).

The Current Study

The purpose of this interpretative study was to advance toward a better understanding of elementary preservice teachers' beliefs about effective classroom instruction and the behavior and characteristics of effective teachers, and how these beliefs may vary at different points during a teacher education program (i.e., first-year students, second- and third-year students, and student teachers).

The first stage of the study encompassed an in-depth qualitative exploration of the first two research questions. The objective was to provide a rich and thorough account of elementary preservice teachers' beliefs about effective classroom instruction and the behaviors and characteristics effective teachers. Data was collected using an intensive interview protocol consisting of semi-structured questions, and analyzed using grounded theory analytic strategies (Charmaz, 2006, 2011).

The second stage built up on the results obtained in the first stage. After the initial codes and analytic categories were extracted from the data, the researcher used constant comparison methods (Charmaz, 2006; Glaser & Strauss, 1967) in order to contrast data with analytic categories across participants' points of enrollment in the teacher preparation program. The objective was to explore whether elementary preservice teachers' beliefs about effective classroom instruction and the behaviors and characteristics of effective teachers vary across teacher education.

Research Questions

1. What are elementary preservice teachers' beliefs about effective classroom instruction?
2. What are elementary preservice teachers' beliefs about the behaviors and characteristics of effective teachers?
3. How do elementary preservice teachers' beliefs about effective classroom instruction and the behaviors and characteristics of effective teachers vary at different points in a teacher education program (i.e., first-year students, second- and third-year students, and student teachers)?

CHAPTER 3. METHODOLOGY

The purpose of this interpretative study was to advance toward a better understanding of elementary preservice teachers' beliefs about effective classroom instruction and the behavior and characteristics of effective teachers, and how these beliefs may vary at different points during their teacher education. This chapter provides a detailed description of the methodology used for this study, and it is divided into five sections: a) strategy of inquiry, which provides a description of theoretical and methodological assumptions, the conceptual and operational definition of object of study (i.e., beliefs), and the values, experiences and biases the researcher brought to the study; b) description of participants and sampling procedures; c) measures and materials used for data collection; d) procedures, including contact of participants, data collection and recording strategies, data analysis procedures, qualitative validity and reliability, as well as ethical issues that appeared during the study and how they were addressed; and e) methods of data analysis and interpretation.

Strategy of Inquiry

Qualitative inquiry "involves an interpretative, naturalistic approach to the world [by which researchers attempt] to make sense of, or interpret, phenomena in terms of the meanings people bring to them." (Denzin & Lincoln, 2011, p. 3). According to Creswell

(2013), this task requires the qualitative researcher to use multiple methods and complex reasoning processes (both inductive and deductive) in order to provide a holistic account of phenomena. Moreover, instead of attempting to be an objective, distant observer, the qualitative researcher has to be reflective about what she/he brings to the inquiry process and how this might shape her/his understandings and interpretations of participants' meanings (Creswell, 2013; Miles & Huberman, 1994; Patton, 2002). Hence, it is crucial for the qualitative researcher to explicitly disclose the underlying theoretical and methodological assumptions that frame his/her strategy of inquiry, as well as to identify personal values, experiences, and biases.

Theoretical and Methodological Assumptions

The strategy of inquiry used for the present study is grounded in central assumptions of the constructivist/interpretivist paradigm (Guba, 1990; Lincoln & Guba, 1985; 2013; Lincoln et al., 2011). Accordingly, the researcher assumed that individuals are constantly attempting to make sense of their experiences with the world around them. Following the stance of Lincoln and Guba (2013), this sense-making effort was understood as an act of construal by which individuals coherently articulate linguistic and non-linguistic constructs (or mental realizations of unitary entities and relationships in their surrounding world, such as objects and events), in order to organize and provide meaning to their experiences. The final outcome that results from this act of construal was thus regarded as a construction; that is, "a coherent, articulated set of constructs – a pattern or web of constructs and their interconnections – that makes sense of some aspect (some 'chunk') of the constructor's surround (…), [and which] makes possible the

synthesis of personal experience and the communication of that experience to others." (Lincoln & Guba, 2013, p. 47-51). In this sense, a construction symbolizes a way of making sense of something, rather than something that is isomorphic to presumably "real" or "true" elements of the world (Guba & Lincoln, 1985, Lincoln et al., 2011).

Lincoln and Guba (2013) further suggest that individuals' constructions can be described according to at least two elements. The first of these elements was regarded as the meaning embodied in a construction. When discussing about the meaning of individuals' constructions, the researcher was basically referring to the substance or content of their constructions. In addition, constructions can be also described according to their level of sophistication (or their level of complexity and scope). In this sense, the researcher assumed that constructions are organized and interrelated in different ways, ranging from simple descriptions of single entities (e.g., making sense of a stapler) to complex theories or paradigms (e.g., making sense of racism). Since individuals are constantly trying to make sense of new experiences, the researcher further assumed that both the meaning and the level of sophistication of their constructions are open to continuous reconstruction or refinement (Lincoln & Guba, 2013), which implies that individuals' constructions may not remain stable over time and might be modified or replaced in order to make sense of new experiences.

Other essential aspect of individuals' constructions is that they can be socially constructed, and be sensitive to sociocultural influences (Lincoln & Guba, 1985; Lincoln et al., 2011; Miller, 2011). The researcher assumed that even though constructions ultimately occur at the individual level (Guba, 1990), they can be developed jointly by individuals having some level of shared experience (e.g., people living in the same setting

under similar personal, social, and historical conditions), or learned from others through vicarious experiences (e.g., by verbal communication, via a journal article, or through a case study), or inherited from culture and socialization practices (e.g., acquisition of constructions through formal education) (Lincoln & Guba, 2013). In this sense, two or more individuals can embrace common or shared constructions. It is important to notice, however, that shared constructions, whether formed jointly, learned, or inherited from culture, do not have to be arranged or held in the same way by different individuals. These shared constructions might have a "common consensual core (…) surrounded by more peripheral elements which differ in greater or lesser degree from person to person." (Lincoln & Guba, 2013, p. 53). Accordingly, the researcher assumed that individuals can share some central aspects of the meaning embodied in their construction and its level of sophistication, but they shall not share the exact, same construction. In other words, although individuals' constructions can be assembled intersubjectively, they are, ultimately, a subjective mental outcome that resulted from the individual's own act of construal.

In light of these assumptions, the researcher regarded the aim of constructivist/ interpretive inquiry as the understanding of individuals' constructions by means of reconstruction of those constructions (Guba & Lincoln, 2005; Lincoln & Guba, 2013). The inquiry process was thus understood as a conscious and systematic effort by the researcher and the research participants in order to advance towards a more informed and/or sophisticated construction about phenomenon investigated. The researcher did not simply embrace or reproduce what research participants' construed; rather, the researcher learned from and interpreted the constructions participants brought to the inquiry process,

and attempted to reconstruct its shared meanings (Lincoln et al., 2011). In this sense, the researcher's role during the inquiry process was that of an interpreter of participants' shared constructions.

According to Lincoln and Guba (2013), the aim of interpretative inquiry can be attained using a hermeneutic/dialectic framework by which competing constructions are examined and contrasted in order "to move toward common consensual constructions." (p. 64). In other words, individuals' constructions shall be "elicited and refined hermeneutically, and compared and contrasted dialectically, with the aim of generating one or few constructions on which there is substantial consensus." (Guba, 1990, p. 27). The inquiry process thus encompasses both a process of deconstruction (i.e., disassembling of individual constructions) and a process of reconstruction (i.e., the generation of common consensual constructions) (Lincoln et al., 2011). Accordingly, the researcher also assumed that his role during the inquiry process was that of deconstructing and reconstructing participants' constructions.

A methodological approach by which this hermeneutic/dialectic framework could be materialized is to use constructivist grounded theory methods (i.e., Charmaz, 2006, 2011). Charmaz (2006) advocates for a constructivist perspective to grounded theory methods which, unlike the post-positivist, systematic approach proposed by other scholars (e.g., Glaser & Strauss, 1967; Strauss & Corbin, 1990), harmonizes with an interpretative study of the world by emphasizing the understanding of multiple realities through flexible analytic and interpretative guidelines. Essentially, constructivist grounded theory methods of data collection and analysis encourage the researcher to try to "see the world as participants do – from the inside" (Charmaz, 2006, p. 14), and thus

provide a thorough and rich analytic account of participants' constructions. For this interpretative study the researcher embraced this particular methodological approach in order to advance towards an understanding of elementary preservice teachers' beliefs about teacher effectiveness.

The Object of Inquiry

The object of inquiry of this study was belief. As discussed in Chapter 2, the construct of belief was conceptualized according to six tenets or principles. The researcher thus assumed that beliefs are:

- Cognitive attitudes of propositional stance (or attitudes of stance) that can be characterized in terms of truth and falsehood (Sayre, 1997).
- Constructions, which are constrained by constructivist/interpretive ontological, epistemological, and methodological assumptions (Lincoln & Guba, 1985, 2013).
- Appropriately probed or assessed by asking "Why?" questions (Sayre, 1997).
- Usually in dispositional and implicit form, meaning that they can be implicitly sustained over long periods of time once the immediate occasion in which they were constructed is past (Armstrong, 1980; Sayre, 1997).
- Hold with different levels of certainty or confidence (Bogdan, 1986b; Sayre, 1997; Schwitzgebel, 2011).
- Shaped by factors external to the mind, and in that sense can be socially constructed (Anderson, 2002; Bogdan, 1986b; Gilbert, 1987; Hacking, 1999).

The researcher also assumed that beliefs are not observable or can be directly measured, so they must be inferred or interpreted from individuals' verbal discourse or actions (Pajares, 1992). According to Schwitzgebel (2011), "believing a proposition, in conditions favoring sincere expression of that belief, will typically lead to the assertion of that proposition." (p. 19). Furthermore, the researcher assumed that although beliefs are usually in implicit, dispositional form, they could be later reactivated in explicit, occurrent form (Sayre, 1997). Therefore, beliefs were operationalized as individuals' cognitive attitudes (i.e., constructions) directed toward propositional objects, which can be interpreted by means of a hermeneutical/dialectical analysis of individuals' verbal discourse. In this sense, participants' beliefs were assessed in terms of the interpretations made by the researcher of participants' responses.

The Researcher

A particular feature of qualitative inquiry is that "the role of the researcher as the primary data collection instrument necessitates the identification of personal values, assumptions and biases at the outset of the study." (Creswell, 2009, p. 196). The researcher's perceptions of teaching and students growth and achievement have been shaped by his personal experiences both as a student and as a teacher in diverse cultural settings, particularly at the college level. From 2000 to 2005 the researcher was a psychology student at a university in Colombia's Caribbean region. During this time the research was first introduced to mainstream theories in cognitive psychology and education, particularly the theories of constructivists such as Jean Piaget, Lev Vygotsky, and Jerome Bruner. It was also during this time when the researcher realized that

education is the best tool any society has to improve the quality of life of its individuals, and that the quality of teaching has to be its most critical component. While working as a teaching assistant in various courses and collaborating in different educational research projects in the Department of Psychology, the researcher had the opportunity to meet some of the best teachers he have ever had. They were effective teachers not because they were recognized experts in their fields or had the best pedagogical techniques; they were the best because they were sincerely concerned about student growth and were always enthusiastic in assisting students not only in their academic matters, but also in becoming productive members of society and, above all, better human beings.

After graduating from college, the researcher worked for two years (2006-2008) as a limited-term professor in the Department of Psychology and the Institute of Educational Studies at the same university. During this time the researcher was able to experience the challenges and rewards of being a teacher. More importantly, these academic experiences, along with the others he previously had with teachers during his college years, stimulated the researcher to begin developing a more nuanced perspective of teaching. By embracing a constructivist (and somewhat critical) pedagogical approach, the researcher started to realize that the role of the teacher, instead of that of the "traditional" transmitter of knowledge, should be that of facilitating students' understanding of disciplinary knowledge and enhancement of their reasoning skills, while empowering them to reflect critically about the impact of their role as learners on social issues pertaining to their surrounding world (and vice versa). Additionally, his participation in two research projects on students' conceptions about learning furthered the researcher's interest in research related to the psychological aspects of teaching and

learning, particularly regarding students' and teachers' mental constructions about teaching and learning.

From 2008 to the present, the researcher has been pursuing a PhD in Educational Psychology at a large, public mid-west university in the United States. During this time the researcher has had the opportunity to experience some of the nuances of a very distinct socio-cultural setting, as well as being part of a different academic culture, both as a graduate student and as a teaching assistant. As a graduate student, the researcher has been able to also meet excellent teachers who are enthusiastic and committed to their students' growth, and share the researcher's passion for facilitating students' understanding and enhancement of their reasoning skills. This has contributed in consolidating the researcher's position on teaching. In the last four years, the researcher has also worked at this university as a teaching assistant for one foundational course in the Teacher Education program (i.e., Learning and Motivation). This experience has made the researcher realize that there are many contextual and cultural factors that can profoundly shape the nature of effective instruction, such as the access to different types of resources in the classroom, the existence of socio-cultural differences between the teacher and students, and institutional and governmental policies that regulate both the processes and products of education.

The researcher considered that these experiences have offered him the opportunity to enhance his awareness, knowledge and sensitivity to different aspects of teaching, as well as to continually reconstruct his own perspectives about the nature of effective instruction and the characteristics and behaviors of effective teachers. Due to this, the researcher brought certain biases to the study. Although the researcher made every effort

to strengthen the credibility and dependability of the study, he recognizes that theses biases could have shaped how he collected, analyzed, and interpreted the data.

The Participants

Participants were 24 elementary preservice teachers enrolled in a teacher education program at a large mid-west university in the United States. Preservice teachers were classified according to three points of enrolment in the program: First-year students, second- and third-year students, and student teachers. The teacher education program from where participants were selected is divided according to two "Gates" or points of admission (i.e., Gate A and Gate B). In order to pass through each gate students must have completed a series of foundational program courses and field experiences. Following is a description of the participants per each point of enrollment, in terms of the requirements needed to pass through each Gate.

Description of Participants by Points of Enrollment

First-Year Students (Before Gate A)

During their first year in the teacher education program, participants must complete six foundational courses and two early field experiences, which are required to all students in the program in order to pass through Gate A. In these foundational courses students cover content related to educational technology, multiculturalism in the classroom, learning and motivational theories, exceptional children and inclusiveness, and literacy in the primary classroom. As a requirement to pass through Gate A, students

also need to attend to schools in the area during periods of 6-8 weeks per semester (one visit per week), and participate as observers in an elementary classroom under the supervision of a school teacher. During one of these field experiences students have the opportunity to teach one small and one large group lesson.

Second- and Third-Year Students (Before Gate B)

During the next four semesters, students in the teacher education program must complete 10 foundational program courses (mainly methods courses) and three field experiences in order to pass through Gate B. The contents covered during this period are related to social studies in elementary education, literacy in the intermediate and the elementary classroom, mathematics, science and physical education in the elementary school, history and philosophy of education, classroom management, arts and music, and teaching English as a second language. Students are also required to attend to schools during a period of 6-8 weeks per semester (multiple visits per week), and conduct various teaching activities in elementary classrooms under the supervision of a teacher. Unlike the field experiences during their first year, students are now required to have a more active involvement in the classroom. These students generally have to teach two to four large lessons per semester and support the teacher tutoring groups of students.

Student Teachers (after Gate B)

In their last semester in the teacher education program (i.e., after having completed all required foundational courses and field experiences for Gates A and B), students participate in an elementary classroom as a full time student teacher and in a

student teaching seminar under the mentorship of the classroom teacher and a university supervisor.

Sampling Procedures

Qualitative studies do not strive for generalizations; rather, they focus in elucidating the particular and on maximizing understanding of phenomena (Creswell, 2013; Morse, 2000). Therefore, the logic of sampling in qualitative research is somehow different that in quantitative-oriented studies. In general, qualitative samples are selected purposefully, and their sizes are usually not determined *a priori* and in terms of their extrapolative power, but in terms of their adequacy to ensure that all or most of the voices/perceptions/views of participants are uncovered (Onwuegbuzie & Leech, 2007; Miles & Huberman, 1994).

Using good sampling procedures in qualitative research can enhance rigor, transparency, and coherence (Creswell, 2013; Mason, 2010; Patton, 2002; Robinson, 2014). The researcher used the guidelines suggested by Robinson (2014) for determining samples in qualitative studies, in order to determine which participants could participate in the study. According to these guidelines, qualitative researchers should make decisions about: a) the sample universe and inclusion criteria, b) sample size, and c) sampling strategy.

Sample Universe and Inclusion Criteria

Also called study population or target population, the sample universe is "the totally of persons from which cases may legitimately be sampled." (Robinson, 2014, p.

26). An important aspect in determining the study population is to define the attributes that potential cases must possess in order to qualify for the study (i.e., inclusion criteria). Particularly in interpretative studies, establishing clear and thorough inclusion criteria is desirable in order to ensure that the sample selected for the study is as homogenous as possible (Patton, 2002). Homogeneous samples can facilitative in-depth examination and understanding phenomena (Guba & Lincoln, 1985; Robinson, 2014) and thus help reduce issues related to sample size, such as reaching data saturation (i.e., the more homogeneous the sample, the more confident the researcher can be in reaching data saturation) (Guest, Bunce, & Johnson, 2006).

According to Robinson (2014), sample universe homogeneity can be achieved in terms of demographic homogeneity (age range, gender, ethnic background), geographical homogeneity (same location), physical homogeneity (a common physical characteristic), psychological homogeneity (a common psychological trait or ability), and/or life history homogeneity (common past experience). The inclusion criteria used for this study were defined according to two of the above criterions: geographical homogeneity and life history homogeneity. Accordingly, participants had to be enrolled in the same elementary teacher education program of a large mid-west university in the United States, and had to have similar educational experiences during their participation in the program (i.e., field experiences and involvement in foundational program courses). Participants were selected regardless of age, race, gender, or any other demographic variables, as well as any physical or psychological characteristics.

Although exclusively choosing participants from an elementary teacher education program could address an important gap in the literature of preservice teachers' beliefs

about teacher effectiveness, the researcher acknowledged that exploring variations between secondary and elementary preservice teachers' beliefs could also provide important insights to our understanding of preservice teachers thinking (Book & Freeman, 1986). Nonetheless, there were pragmatic reasons that prevented further research venues. Considering the timeframe and resources that were allocated for this study, as well as the nature of the study's analytical procedures, potential variations in preservice teachers' beliefs across grade levels were not examined. This and other concerns (e.g., exploring variations across disciplinary domains) could be worth investigating in future studies.

Sample Size

Determining sample size has been a contentious methodological issue in qualitative inquiry; particularly in regard to whether establishing sample size prior to data collection may be useful for interpretive studies (Mason, 2010). However, most qualitative researchers seem to agree that adequately determining the number of participants (or units of analysis) is a crucial step in ensuring the credibility and relevance of any qualitative study (Charmaz, 2006; Creswell, 2013; Guba & Lincoln, 1985; Miles & Huberman, 1994; Morse, 1994; 2000; Onwuegbuzie & Leech, 2007). According to Sandelowski (1995), in the context of qualitative inquiry "an adequate sample size permits (by virtue of not being too large) a deep, case-oriented analysis that results in a richly textured understanding of experience." (p. 183).

Perhaps the most important factor in determining an adequate sample size in qualitative research is data saturation (Mason, 2010; Robinson, 2014). The concept of

data saturation (or informational redundancy, Guba & Lincoln, 1985) is generally defined as the stage in qualitative inquiry when the data do not shed any further light on the phenomenon being studied (Charmaz, 2006; Glaser & Strauss, 1967; Guba & Lincoln, 1985). According to Charmaz (2006), this implies that the researcher should stop gathering new data when it no longer "sparks" new insights on participants' experiences or reveals new properties of the codes and analytic categories. In studies using grounded theory methods, Charmaz further suggests that when the sample is relatively homogeneous and there is no intention of developing a theory from the study, data saturation could be reached early and therefore a large sample of participants may not be necessary. As a general rule-of-thumb, sample sizes should not be too large so that it is difficult to achieve deep, case-oriented analysis, and not too small so that data saturation is compromised (Onwuegbuzie & Leech, 2007; Sandelowski, 1995).

The final sample size for this interpretative study was primarily determined based on the concept of data saturation explained above. Following Charmaz (2006)'s recommendations, the researcher determined the total number of participants when new themes and codes were no longer emerging from the analysis of participants' responses. Since the researcher simultaneously collected and analyzed the data using grounded theory methods, considering data saturation as the primary criterion to determine sample size was particularly convenient (Strauss & Corbin, 1990). According to Robinson (2014), when data collection and analysis are conducted simultaneously, the researcher can make more educated decisions regarding whether further data is needed to reach saturation. Hence, the researcher began developing themes and codes earlier during data collection by continuously studying the data and his analytic notes. This procedure

enabled the researcher to closely monitor the data and increase his changes in making proper decisions regarding whether more participants were needed to reach data saturation. Most themes began to be recurrent after data were collected from the seventh participant. After having collected data from all the participants, the researcher considered that no new themes were emerging and that data saturation was reached.

There are other factors that can affect data saturation and therefore decisions regarding sample size. One of these factors has to do with the quality of the data. According to Morse (2000), if the data is rich, on target, and contains minimum "waste", the better its quality and so the less it will take to reach data saturation. Based on the results of a previous pilot study, the researcher was confident that the methods of data collection used in the present study could provide rich, detailed, and on-target data regarding participants' beliefs about teacher effectiveness. The researcher considers that most of the data collected during the study was in fact rich, detailed, and on-target.

Another factor that could affect data saturation is related to the scope of the study and methods of data collection. Morse (2000) suggested that when the scope of the study is too large and various methods of data collection are being used, the more diverse will be the data and thus the more it will take to reach data saturation. Since the purpose of this study was to explore a single, specific construct (i.e., beliefs about teacher effectiveness) in a relatively homogenous target population (i.e., elementary preservice teachers in the same teacher preparation program), and also a single method of data collection was used (i.e., intensive interview), the researcher did not expect to obtain overly diverse data that could compromise data saturation.

A third factor that can affect decisions about sample size is related to pragmatic reasons such as resources, funding, time, and manpower (Robinson, 2014). Considering the resources that were available for the study and the compensation given to participants for their participation in the study, the researcher considered that the sample size could not be larger than 33 participants (the funding available was US$500, which only allowed the researcher to provide compensation to that number of participants). However, this factor did not compromised data saturation. Even though the total number of participants and the amount of data collected during a previous pilot study did not allow the researcher to reach saturation, he noticed that some recurrent themes began to emerge from the data around the third and fourth participants. Therefore, the researcher was confident that no more than 33 participants would be necessary to reach data saturation.

Even though most qualitative researchers agree that data saturation should be the guiding principle in determining the size of the sample, and therefore it should be deemed as an ongoing, flexible process during data collection and analysis, others have recommended that initial decisions about sample size, though preliminary, are required prior to beginning a qualitative study (Onwuegbuzie & Leech, 2007; Miles & Huberman, 1994). Specifically, it is suggested that qualitative researchers provide an approximate sample size range (Robinson, 2014). A common method used in qualitative studies to determine that range is to follow the recommendations of experienced qualitative researchers regarding the numbers of participants that might be adequate for specific types of qualitative studies (e.g., ethnography, grounded theory, phenomenology). However, this method is problematic because researchers usually do not explain how they came about those “ideal” ranges (e.g., 30-50 participants for grounded theory

studies, Morse, 1994). Besides, considering all the different factors that could potentially affect decisions regarding sample size, it is difficult to determine whether those ranges could be applicable to "similar" studies.

Onwuegbuzie and Leech (2007) suggest that a good alternative for determining the sample size range in a qualitative study is to conduct a qualitative power analysis. This method basically consists in conducting a meta-synthesis or meta-summary of previous considerations regarding the number of participants and/or the number and length of interviews in a particular qualitative inquiry domain. For example, Mason (2010) conducted a meta-synthesis of sample sizes found in 560 doctoral dissertations covering 26 different types of qualitative approaches (e.g., case study, ethnography, grounded theory), and in which interviewing was the primary method of data collection. Mason found that in studies using grounded theory methods (N=174) the mean sample size was 32, and a large percentage of studies (49%) had sample sizes in the range of 20-30 participants, the same range recommended by Creswell, 2013 for studies using grounded theory methods.

Taking together the results from the meta-synthesis conducted by Mason (2010), the analysis of factors related to data saturation discussed above, and the initial upshots regarding data saturation obtained from the pilot study, the researcher considered that a safe range for the total number of participants would be from 20 to 33. The maximum value of the range was basically determined by the availability of resources. In addition, this value exceeded the average number of participants usually found in qualitative dissertations using grounded theory methods and interviews as the primary method of data collection (Mason, 2010). The minimum value of the range was determined by the

fact that a significant portion of qualitative dissertations using grounded theory methods usually report samples of at least 20 participants (Mason, 2010).

It is important to notice that this range accounted for the total of participants in the sample, and not for the number of participants in each of the points of enrollment or groups in which the sample was divided (i.e., first-year students, second- and third-year students, and student teachers). Since the purpose of investigating variations in participants' beliefs across their points of enrollment in the program was purely exploratory, establishing a range for the number of participants per point of enrollment was not considered crucial for the study.

Sampling Strategy

Participants were selected purposefully. In this sense, the researcher selected individuals who could purposefully provide rich information to maximize the understanding of the problem investigated (Creswell, 2013; Patton, 2002). According to Sandelowski (1995), the power of purposeful sampling strategies rest in "the quality of the information obtained per sampling unit, as opposed to the number per se." (p. 179). In order words, the researcher selected the participants because they were believed to be good sources of data for the purpose of the study, and not because he wanted to generalize the findings to other individuals or groups. Additionally, purposeful sampling strategies helped ensuring that the inclusion criteria chosen for the study were met (Robinson, 2014).

The purposeful sampling strategy used for this study combined convenience (Creswell, 2013; Patton, 2002; Sandelowski, 1995) and quota (Onwuegbuzie & Leech,

2007; Robinson, 2014) sampling procedures. The researcher selected elementary preservice teachers that were conveniently available and willing to participate in the study, and classified them according to groups or quotas previously established (i.e., first year students, second-third year students, and student teachers). Quota sampling was chosen mainly because it does not require the researcher to allocate a predetermined fixed number of cases in each group (Robinson, 2014). As mentioned above, the researcher decided not to establish a predetermined number of participants for each of the three groups. The combination of convenience and quota sampling procedures allowed the researcher to explore potential variations in participants' beliefs about teacher effectiveness across different points of enrollment in the Teacher Education program.

Measures

This section provides a detailed description of the method of data collection that the researcher used to gather the data (i.e., intensive interviewing, Charmaz, 2006). Included in this section are: a) a conceptual definition of the technique of intensive interviewing, its advantages, and a rationale for choosing a semi-structured format for the study; b) the sensitizing concepts that the researcher used to frame the interview questions; c) a detailed description of the interview protocol; and d) a description of the materials that were used during the interview.

Intensive Interviewing

According to Charmaz (2006), intensive interviewing is a flexible, emergent data collection technique that allows for an in-depth exploration of phenomena by fostering

the elicitation of participants' constructions and, thus, "it is a useful method for interpretative inquiry." (p. 25). This mode of interviewing offers various advantages both for the researcher and the participants. It allows the researcher to go beneath the surface of participants' constructions, request participants to provide more detail or elaboration on specific topics, keep participants on topic, return to participant's previous responses, and restate participant's responses to check for accuracy. In addition, during the interview participants have the opportunity to openly express their thoughts and feelings, chose what to disclose and how to disclose it, assist the researcher in understanding their experiences, and reflect on previous responses (Charmaz, 2006). Intensive interviewing thus enabled the researcher to gather rich, detailed data, while continuously checking for accuracy and consistency of participants' responses. In other words, using this data collection technique helped strengthen the credibility and dependability of data interpretation, and therefore the trustworthiness of the study (Lincoln & Guba, 1985).

Charmaz (2006) further suggested that intensive interviewing in conjunction with semi-structured focus questions allows the researcher to "have more direct control over the construction of data than most other methods." (p. 28). Semi-structured questions allow the researcher to narrow the focus of the interview so participants can provide information about a specific topic of interest, while allowing for responses in the participants own words (Patton, 2002). Moreover, a semi-structured protocol helps minimize variations in the interview questions posed to participants and facilitates the analysis by making responses easier to find and compare (Rubin & Rubin, 2011). Using a semi-structured interview protocol was a valuable method of data collection for this

study, allowing the researcher to narrow the focus of the interview and gather rich, detailed data from participants.

Sensitizing Concepts

Sensitizing concepts are initial preliminary concepts that orient the inquiry process and provide the researcher with ideas about what kinds of questions she/he will ask (Bowen, 2006; Charmaz, 2006; Patton, 2002). According to Charmaz (2006), the initial concepts can be developed from constructs or topics found in previous literature, and then used as a "point of departure to form interview questions, to look at data, to listen to interviewees, and to think analytically about the data." (p. 17).

Accordingly, the interview questions used in this study (see Appendix) were developed by three sensitizing concepts derived from previous research on teacher effectiveness: a) effective classroom instruction, which refers to instructional and environmental conditions in the classroom (i.e., classroom ecology) that can effectively contribute in fostering student growth and achievement (Brophy & Good, 1986; Kyriacou, 1985; Bryk & Raudenbush, 1988); b) characteristics of effective teachers, which refers to the personal attributes and other characteristics of teachers whom are considered more effective in promoting student growth and academic achievement (Anderson, 2004; Brophy, 2001; Getzels & Jackson, 1963; Ryans, 1961); and c) behaviors of effective teachers, which refers to the specific actions (or instructional processes) that teachers use the classroom and that can directly contribute to student growth and academic achievement (Good et al., 1975; Harris, 1998).

Interview Protocol

Participants completed the interview protocol used for this study in approximately 45 minutes to an hour in one single section. The protocol included an introductory section, a section with interview questions and prompts (divided into two phases), and a closing section. Following is a detailed description of these sections.

Rapport and Introductory Statement

The interview began with a formal salutation between the researcher and the participant, followed by a short talk leaded by the researcher about the overall experience of the participant during the current semester (i.e., How's the semester going so far?). This short talk usually lasted between two to five minutes, and was used to establish rapport with the participants. The researcher then thanked the participants for voluntarily participating in the study and asked them to read and sign the consent form and make questions regarding the study. Then the researcher informed the participants about the topic and procedures of the interview. The researcher pointed out to all participants that there were not right or wrong answers and that the information would only be used for research purposes.

Interview Questions

The first phase of the interview consisted of six semi-structured questions and several prompts designed to encourage participants to discuss about effective classroom instruction and the behaviors and characteristics of effective teachers (see Appendix).

The first four questions focused on eliciting participants' beliefs about effective classroom instruction. These four questions were previously pilot-tested and were found to work well, allowing participants to provide rich, detailed information about their beliefs. Some of the follow-up prompts to the four questions were also found to be working properly (i.e., why-type prompts and elaboration prompts). However, during the pilot study the researcher noticed that some participants' responses to Question 1 (i.e., could you please describe an ideal classroom for me?) were not providing rich information and could be further expanded by adding a new prompt. Particularly, the researcher realized that participants might have had additional ideas about an ideal classroom that they did not disclose in their initial response to the question. Therefore, the researcher designed a new prompt (i.e., Could you think of any other things that may be going on in an ideal classroom?), which later allowed participants to provide new or more detailed information about an ideal classroom.

Additionally, after the pilot study the researcher created other two new prompts for Question 1 (i.e., Have you been in a classroom with those or similar characteristics? Could you describe what was going on in that classroom?). An interesting preliminary finding from the pilot study was that some participants were connecting their responses to prompt 1.2 (i.e., Why do think ____ is/are important?) to previous experiences they had as students in ideal classrooms. This type of data allowed the researcher to have a better sense of why some participants had construed particular beliefs about an effective classroom instruction.

Questions 5 and 6 focused on eliciting participants' beliefs about the characteristics and behaviors of effective teachers (respectively). These two questions

and some of their prompts (i.e., why-type prompts and elaboration prompts) were also pilot-tested. Question 6 and its follow-up prompts allowed participants in the pilot study to provide detailed information on their beliefs about the behaviors of effective teachers, and thus was not modified for the study. However, Question 5 (i.e., What do you think an effective teacher looks like?) was not clear to most participants in the pilot study. Specifically, three of the first four participants who participated in the pilot study did not know what the question was about. They asked the researcher if the question was related to the teacher's physical appearance or dressing code. The researcher encouraged those participants to talk about what they thought the question was about, and found that all of them provided information about the way in which effective teachers should dress, which was not the intended focus of the question. The researcher thus decided to focus the question specifically on the characteristics of effective teacher (i.e., what do you think are characteristics of an effective teacher?). This modified version of Question 5 was later pilot-tested in two subsequent interviews and allowed participants to provide rich and on target information about to the characteristics of effective teachers.

Following the same rationale used to create the new follow-up prompts for Question 1, the researcher also created similar follow-up prompts for Question 5 (i.e., Could you think of any other characteristics? Have you been in a classroom where the teacher had those or similar characteristics? Could you please describe her/him?) and Question 6 (i.e., Could you think of any other things effective teacher do in the classroom? Have you been in a classroom where the teacher exhibited those or similar behaviors? Could you please describe her/him?).

In the second part of the interview participants were asked to watch two videos of elementary teachers interacting with a group of students in a classroom, and then answer to three semi-structured questions regarding what they saw. According to Anderson and Bird (1994), using this type of data collection procedure can stimulate preservice teachers' thinking about teaching practices. During the pilot study the researcher noticed that participants' responses to these questions (and their prompts), provided new and/or corroborating information regarding their beliefs about an effective classroom instruction and the characteristics and behaviors of effective teachers.

Participants' responses to Question 7 (i.e., What do you think about the classroom you just observed?) provided information about several elements of an effective classroom instruction, including information about the role of the teacher, the students and the environment, as well as information about whether the characteristics and behaviors of the teachers in the videos were effectively contributing to students' growth and academic achievement. Question 8 (i.e., Would you consider this an example of an effective classroom instruction?) allowed participants to further discuss on their beliefs about effective classroom instruction. In order to justify why the cases in the videos were (or not) examples of an effective classroom instruction, some of the participants were able to disclose new and/or corroborating ideas regarding their beliefs about effective classroom instruction. The last question (i.e., What would you recommend to the teacher you just saw to become a more effective teacher?) encouraged participants to further discuss on their beliefs about the characteristics and behaviors of effective teachers. By thinking of recommendations that could be given to the teachers in the videos,

participants were able to disclose new and/or corroborating ideas regarding their beliefs about the characteristics and behaviors of effective teachers.

After the pilot study was concluded, the researcher decided to add a new prompt for all questions (i.e., You were talking about_____, is that right?) as a "checking maneuver" to avoid misconstruing participants' beliefs during the analysis. Participants' responses to this prompt helped the researcher to corroborate his interpretations of the data, thus strengthening the credibility of the study.

Closing Statement and Member Checking Agreement

After participants received compensation, the researcher thanked then for participating in the study and asked them if they agree to be contacted in the future to check on the accuracy of transcriptions and analysis of their responses.

Materials

During the second phase of the interview the researcher asked participants to watch two videos of elementary teachers interacting with students in a classroom. The first video showed a short third-grade spelling lesson. During the lesson the teacher asked students to write down words of which one or more letters were missing and then to complete the words based on how each of them sounded. After all students completed the task, the teacher proceeded by pronouncing one by one each of the words and asked the students to spell them out loud and make corrections as necessary. In the second video, the teacher showed students a cardboard with drawings of different objects and their corresponding names. After pronouncing and pointing out each of the objects, the teacher

asked the students to individually come near the cardboard and identify two objects which names sound alike (rhyme). The length of the two videos was between one to three minutes. Other materials used during the interview were an audio recorder, a computer to show the videos to participants, a digital watch to record the duration of the interview (only visible to the researcher), and a notebook for note-taking.

Procedures

This section provides a description of the study procedures, including: a) contact and selection of participants, b) data collection and recoding strategies, c) data analysis procedures, d) qualitative validity procedures, e) qualitative reliability procedures, and f) ethical considerations.

Contact and Selection of Participants

All elementary preservice teachers enrolled in the teacher education program at the time of the study received an electronic invitation letter via email. The researcher submitted a request to the university's Teacher Education Mailing List to send the electronic invitation. The invitation included general information regarding the purpose of the study, the type of data that would be collected and how it would be collected, compensation and confidentiality, as well as the procedures that participants would need to follow in order to be selected for the study.

Twenty-four elementary preservice teachers who voluntarily agreed to participate in the study were selected. Participants replied to the electronic invitation letter by sending an email message to the researcher in which they stated that they were willing to

participate in the study, and also included information about the courses they were taking at that moment in the teacher education program. This information was needed in advance so the researcher could determine participants' points of enrollment in the program, and thus be able to monitor the number of participants in each group (i.e., first year students, second-third year students, and student teachers). The researcher arranged the day and time for the interviews in a way that the data was collected uniformily across all three groups. In this sense, the first three interviews were arranged so that they were conducted individually with one participant from each group, the next three interviews were arranged in the same way, and so on. This selection procedure provided the researcher with more control over data collection and the exploration of variations in participants' beliefs across groups.

The researcher also contacted the participants via email at two different points during the inquiry processes in order to send them the final transcripts of their interviews (individually) and a document containing a preliminary analysis and interpretations of the data. This was done as part of a validity procedure described in detail in a subsection below (i.e., member checking). After this the researcher sent an email message to all participants expressing his appreciation for their participation, and offered them a copy of the final results of the study.

Data Collection and Recording Strategies

"*How* you collect data affects *which* phenomena you will see, *how, where,* and *when* you will view them, and *what* sense you will make of them." (Charmaz, 2006, p. 15). The data collection approach chosen for the present study involved conducting

intensive semi-structured interviews, audiotaping and note-taking during interviews, and the transcription of the interviews (Creswell, 2013).

All interviews were conducted in the researcher's office during a period of two weeks. At the beginning of the interview the researcher gave participants an informed consent form. The consent form included detailed information regarding the purpose of the study, the type of data that would be collected, the procedures and potential risk and benefits that participants may have during and after the study, and compensation and confidentiality (particularly how the information they provided would be kept anonymous, how the data would be stored and for how long, and who would have access to their responses). After participants read this information the research invited them to ask any further questions about the study and provided them with a copy of the consent form.

According to Charmaz (2006), when combined, audio-recording and note-taking can assist the researcher in giving full attention to research participants, coming back to some of their responses later in the interview and providing detailed information of participants responses. The researcher used a Digital Voice Recorder to record the interviews. All interviews were audio recorded upon participants' agreement and were transcribed by the researcher into separate MS Word files using the Express Scribe Transcription Kit, which included a playback software with variable speed options and a USB foot pedal for audio playback. Whenever possible, the researcher transcribed the interviews immediately after they were finalized. In addition, the researcher used a notepad to take notes during the interviews. Participants were notified of the intention of this procedure at the beginning of the interview in order to avoid stress and/or distractions

that are commonly seen in participants when this procedure is implemented without previous notification (Obenchain, personal communication, April 2013).

All signed consent forms, audio recordings, notes, and transcripts were kept anonymous and secured in the researcher's possession at all times. Creswell (2013) recommends that good data-storing practices usually include: Making backup copies, keeping a master list of the information collected (by type), and masking participants' names to protect their identity. The researcher kept the original signed consent forms and notes in a locked cabinet in his office, and scanned copies in his personal computer. Copies of audio files and transcripts were stored in the researcher's personal computer and in an external hard drive. The researcher also created individual electronic folders with information about the interviews (e.g., duration, IDs, place, observations and notes during the interview). These files were used to develop a master list of all the information collected (by type) per participant, including audio files, transcriptions, and interview notes. Additionally, the researcher created ID codes for all participants in order to protect their identity (e.g., P01, P02… P24).

Data Analysis Procedures

The data were analyzed using grounded theory methods (Charmaz, 2006, 2011). The process of data analysis started at the beginning of the first interview. In this sense, data collection and the first-stage of data analysis occurred simultaneously. An important aspect of grounded theory methods, particularly when using interview as the primary method of data collection, is that the researcher is encouraged to write notes (or memos) during the interviews, as well as while listening to audio files and writing the transcripts.

According to Charmaz (2006), this procedure allows the researcher to become familiar with the data and begin defining directions for analysis. During data collection the researcher wrote informal analytic notes about the data, which assisted him in developing codes and potential themes, making comparisons within the data, and articulating preliminary analytical conjectures regarding the appropriateness of the codes and themes in reconstructing participants' beliefs. In addition, this procedure assisted the researcher in making decisions regarding data saturation and sample size (Robinson, 2014; Strauss & Corbin, 1990).

Once an interview was completely transcribed, the researcher read the transcription in order to become acquainted with the participant's voice (i.e., what the data brought by the participant is about, Lincoln et al., 2011). Then, the researcher went again over the transcript and refined the notes that were created during the interview by contrasting them with the raw data. After this process was concluded the researcher began initial coding and focus coding procedures (Charmaz, 2006). During the coding process the researcher developed a codebook (Creswell, 2009, 2013) containing all codes and themes, their definitions, and various segments of raw data from where the codes and themes were extracted. This procedure facilitated the overall process of analysis and also increased the reliability of the findings (Creswell, 2013).

Qualitative Validity Procedures

Qualitative validity is a central factor in determining the overall quality of the study (or trustworthiness, Lincoln & Guba, 1985, 2013). Similar to the concept of internal validity commonly used in quantitative research, for this study the researcher

used the concept of qualitative validity to refer to the processes by which he assessed the accuracy of his analyses and interpretations (Creswell, 2013). In the terminology use by Lincoln and Guba (1985), qualitative validity could be also thought of as the level of credibility or confidence in the findings and interpretations of the study. Following the recommendations of various scholars (i.e., Charmaz, 2006; Creswell, 2013; Lincoln & Guba, 1985, 2013; Miles & Huberman, 1994), the researcher used three validation techniques to strengthen the credibility of his findings and interpretations: Gathering quality data, member checking, and an external auditor.

Gathering Quality Data

The credibility of a study starts with the data (Charmaz, 2006). Collecting data that is rich, substantial, and relevant can significantly improve the chances of the researcher to get a better sense of participants' meanings and hence develop nuanced interpretations about the phenomenon being investigated (Lincoln & Guba, 1985, 2013). The researcher followed the recommendations of Charmaz (2006) to ensure gathering quality data. During and after data collection the researcher used the following guiding questions in order to examine the quality of the data:

- "Have I gained detailed descriptions of a range of participants' views and actions?
- Do the data reveal what lies beneath the surface?
- Have I gathered data that enable me to develop analytic categories?
- What kind of comparisons can I make between the data" (Charmaz, 2006, p. 19).

Taking these questions into consideration enabled the researcher to see the richness and relevance of data regarding preservice teachers' beliefs about teacher effectiveness. To provide the reader with a sense of how the data collected during the study was evaluated, next is a short passage from one of the pilot interviews in which the participant discussed elements of an effective classroom instruction, followed by the researcher's evaluation using the first of the guiding questions recommended by Charmaz (2006).

> Researcher: "Okay, the first question that I would like to ask you is: Could you please describe an ideal classroom for me?"
>
> Participant*:* "Ideal classroom… okay, so I think my ideal classroom will be creating an environment where all the students feel comfortable interacting with one another and with you as the teacher, and I think it's really important to make yourself approachable as a teacher. Like the biggest thing, even though there are so many things that go into a successful classroom."

In response to Charmaz (2006)'s first guiding question (i.e., Have I gained detailed descriptions of a range of participants' views and actions?), the researcher considered that the participant provided important information about different elements of an effective classroom instruction. However, the participant stated in her response that, "there are so many things that go into a successful classroom", to which the researcher did not use any follow up questions to further explore the participant's potential range of views about the topic. By engaging in this reflective process the researcher came up with a new prompt (i.e., Could you think of any other things that may be going on in an ideal classroom?), which allowed him to gain more information of other elements about

effective classroom instruction that participants did not spontaneously bring up during their initial response to the first question.

Member Checking

Member checking is perhaps the most important technique used in qualitative inquiry to strengthen the credibility of the findings (Creswell, 2013; Lincoln & Guba, 1985; Miles & Huberman, 1994). It refers to a procedure where "data, analytic categories, interpretations, and conclusions are tested with members of those stakeholding groups from whom the data were originally collected." (Lincoln & Guba, 1985, p. 314). In other words, it allows the researcher to check the accuracy his/her findings and interpretations with the participants.

Following the recommendations of Lincoln and Guba (2013), once the transcripts of the interviews were completed, the researcher sent them to each of the participants via email (individually), and asked them to check if their thoughts were accurately captured during the interview and if their identifying information was well hidden by the researcher. The researcher gave the participants between one to two weeks to review the transcript so that they could communicate any suggestions or changes. All participants who replied (17 out 24) agreed that their responses were accurately captured and that no changes needed to be made. Then the researcher sent a preliminary copy of the findings to all participants so that they had a chance to check on how accurately the researcher described their views, and to decide whether they wanted some of their quotes to be drop out from the final research report. Only four participants replied back to the researcher, and none of them suggested any changes. In both instances participants were notified

beforehand that the researcher would consider those who did not respond as having approved the accuracy of data and findings of the study.

External Auditor

Another technique for strengthening the credibility of a qualitative study is to use an external auditor. This is a scholarly academic who does not have direct participation in the study and can scrutinize the processes and products of the research; specifically to evaluate if the analyses, interpretations, and conclusions are well supported by the data (Creswell, 2013; Miles & Huberman, 1994).

The audit process for the present study was carried out with another researcher. Lincoln and Guba (2013) recommend that the audit process should include reviews during data collection, analysis and interpretation, and after the study is completed. Accordingly, the first audit took place during data collection. The research met with the second researcher to go over the transcripts, interview notes, and a preliminary analysis of the data. After data collection was completed the researcher provided the external auditor with a first draft of the findings, including a report on intercoder reliability and member checking procedures. Finally, the researcher sent the external auditor a reviewed full version of the dissertation document (i.e., all chapters). The external auditor provided several recommendations to the researcher, particularly regarding the organization of findings and interpretations (e.g., how themes were defined, connections between the raw data and the themes, the appropriateness of the researcher's interpretations in capturing participants' beliefs).

Qualitative Reliability Procedures

Qualitative reliability (or dependability, Lincoln & Guba, 1985, 2013) is another crucial factor in judging the trustworthiness of the study. This concept can be understood as "how the findings and interpretations could be determined to be an outcome of a consistent and dependable process." (Lincoln & Guba, 2013, p. 105). In other words, qualitative reliability focuses primarily on evaluating the consistency of the procedures used by the researcher to analyze and interpret the data. In order to assess this the researcher used the technique of intercoder agreement (Creswell 2009, 2013).

Intercoder Agreement

This technique is used in qualitative inquiry to determine the stability of codes and/or themes in representing the data across multiple coders (Creswell, 2009, 2013; Miles & Huberman, 1994). The intercoder agreement procedure was done using the themes that emerged from the analysis of the data. Following is a description of how this procedure was conducted.

First, the researcher used MS Excel to develop a codebook (Creswell, 2009, 2013; Hruschka, Schwartz, Cobb, Picone-Decaro, Jenkins, & Carey, 2004). The codebook contained a list of the initial themes (first column), their definitions (second column), and specific segments of raw data from where the themes emerged (third column). Second, after completely coding all interview transcripts the researcher sent a modified version of the codebook to an external coder. For the modified version of the codebook the researcher only included the information in the first and second columns (i.e., themes and descriptions), arranged all themes alphabetically, and included only the themes in the first

and last quartiles (50% of all the themes). The corresponding segments of raw data that were in the third column of the researcher's codebook were randomly organized and included in a separate MS word file. The external coder then conducted a top-down coding procedure through which she matched the codes in the modified version of the codebook to the segments of raw data included in the MS word file. Creswell (2013) suggests that when using intercoder agreement it is "more important to have agreement on the text segments [to which the themes are being assigned] than to have the same, exact passage coded." (p. 254).

The researcher then calculated the percentage of agreement between the two codebooks. Miles and Huberman (1994) suggest that an acceptable percentage of agreement in research using coding as its primary method of analysis should be between 80% and 90%. The initial intercoder agreement reached was 84.5%. As recommended by Hruschka et al. (2004), the researcher then met with the external coder in order to review the codebook and made some minor modifications to the themes and definitions in which there was disagreement.

Ethical Considerations

A key aspect of interpretative inquiry is that the researcher must allow all participants' meanings to be heard and honored (Creswell, 2013, Lincoln & Guba, 1985, 2013; Lincoln et al., 2011). The researcher recognizes that there were at least three ethical challenges that could have prevented this from happening: The existence of power imbalance (or power asymmetry) between the researcher and the participants, the researcher's status of authority in the teacher education program, and the potential

formation of malconstructions during the processes of data collection, analysis, and interpretation.

According to Kvale and Brinkmann (2009), the dynamic that takes place between participants and the researcher during an interview should not be deemed in terms of an informal, two-way democratic dialogue between two parts. On the contrary, the nature of this dynamic is usually a one-way, unequal power relationship in which the researcher has a predetermined agenda that allows her/him to obtain particular information of participants' experiences, and leads to his/her own interpretations of phenomena. In the context of interpretive inquiry, the nature of this dynamic posits an important challenge. Lincoln and Guba (2013) argue that, "every act of inquiry is simultaneously a political act, in the sense of the exercise of power (…) [and hence] there is a significant 'tension' generated between the ideals of qualitative inquiry toward democratization of the inquiry process and the authority and relative power of the traditional researcher." (p. 77). This implies that the power imbalance between the researcher and the participants during the interviews could have obstructed the achievement of a non-manipulative, collaborative relationship between both parts, and thus could have potentially threaten the credibility of the findings. Creswell (2013) recommends that to control for this imbalance, the researcher can make the inquiry process more collaborative by allowing participants to be actively involved in the processes of interpretation. To accomplish this the researcher used member checking procedures, thus allowing participants to actively evaluate the analysis and interpretation of their beliefs regarding teacher effectiveness.

Additionally, differences of status between the researcher and participants could have also played a role during the interview (Charmaz, 2006; Creswell, 2013; Lincoln et

al., 2011; Patton, 2002). The researcher acknowledges that his status of authority as a Teaching Assistant in a foundational course that some of the participants were taking, could have affected (positively or negatively) their disposition to disclose information during the interview. For instance, some participants might have considered that what they shared during the interview could have impacted their grades in that course, and therefore they might have felt unwilling to talk about topics of which they would have rather openly talked in a different context (e.g., experiences in the program closely related to some of their beliefs about teacher effectiveness). To prevent participants from feeling pressured about any aspect of the study, the researcher put in place clear and thorough informed consent procedures. Additionally, the researcher explicitly communicated to participants at the beginning of the interview that any information they share would be confidential and would be used only for research purposes, and that it would not have any impact (positive or negative) on their status in any course or the Teacher Education program in general. According to Lincoln and Guba (2013), openly sharing this type of information with participants, as well as being completely transparent with them about all research procedures can facilitate establishing trust and an authentic collaborative relationship during the inquiry process.

Finally, a third ethical challenge that could have emerged during the inquiry process was the formation of malconstructions, both by the researcher and the participants. According to Lincoln and Guba, these are "constructions which overlook available meanings, facts, or evidence." (Lincoln & Guba, 2013, p. 73), and which could not only jeopardize the researcher's understanding of the phenomenon under study, but also neglect or misrepresent participants' actual meanings. To prevent for the negative

effect of potential malconstructions during the inquiry process, the researcher used member checking and intercoder agreement procedures as safeguards. These procedures allowed the researcher not only to strengthen the credibility and dependability of the study, but also helped ensuring that participants' meanings were not being misrepresented or neglected.

Data Analysis and Interpretation

Data were analyzed using grounded theory analytic strategies (Charmaz, 2006, 2011; Glaser & Strauss, 1967; Strauss & Corbin, 1990). The researcher acknowledges that this study was not, by any means, an attempt to construct social scientific theory using grounded theory as a methodological framework; rather, some of the analytic strategies commonly used in grounded theory inquiry (e.g., initial and focus coding, constant comparative methods) were used to sort, synthesize, summarize, and contrast the data (Charmaz, 2011). The strategies of grounded theory methods that were used in the present study are: a) simultaneous data collection and analysis, b) construction of codes and analytic categories from data, c) constant comparative methods, and d) memo writing. Combining grounded theory strategies with different methodological frameworks (e.g., constructivist, narrative) has proved to be a valuable approach in other qualitative studies (Harry, Sturges, & Klingner, 2005; Williamson, 2006). According to Charmaz (2006), "grounded theory guidelines describe the steps of the research process and provide a path through it. Researchers can adopt and adapt them to conduct diverse studies." (p. 9).

The analysis of the data was done in two phases. The first phase began during data collection and encompassed an analysis of participants' responses using segment-by segment coding and focus coding. The objective of this phase was to deconstruct (i.e., disassembling of individual constructions) and then reconstruct (i.e., generation of common consensual constructions) the beliefs of participants about teacher effectiveness. After themes were extracted from the data, in the second phase the researcher used constant comparison methods (Charmaz, 2006; Glaser & Strauss, 1967) in order to contrast data with themes across participants' points of enrollment in the teacher reparation program (i.e., first year students, second-third year students, students teachers). The objective of this phase of the analysis was to explore if preservice elementary teachers' beliefs about effective classroom instruction and the behaviors and characteristics of effective teachers vary across teacher education.

Phase I: Initial and Focused Coding

According to Strauss and Corbin (1990), grounded theory coding strategies offer the opportunity to draw conclusions from indigenous descriptions of phenomena that are constructed with the same terminology used by the individuals who participate in the study, and at the same time a better sense of the actual meaning that individuals deposit in their constructions. Following the guidelines suggested by Charmaz (2006), the researcher used two iterative coding procedures: a) segment-by-segment coding, in which the researcher closely studied fragments of data and created initial codes in order to deconstruct participants' beliefs; and b) focus coding, in which the researcher revised and

redefined the initial codes in order to reconstruct participants' beliefs as common consensual constructions.

Charmaz (2006) recommends that when using segment-by-segment coding the researcher should stick closely to the data (fitting codes to the data) and, if possible, code data as actions (using gerunds instead of nouns). The codes developed during this stage were deemed as provisional, and were thought to assist the researcher in "defining what [was] going on in the data and grapple with the meanings underlying it" (p. 49). Charmaz further suggests using in vivo codes whenever possible. These codes were developed by paying close attention to the language in the data and assisted the researcher in preserving participants' meanings.

During segment-by-segment coding the researcher first broke down participants' responses into its corresponding utterances or idea units. All idea units were identified as segments of data expressing a meaningful, complete sentence or statement. Then, the researcher constructed and allocated codes for each idea unit, trying always to stick closely to the data and using the same terminology of participants. During this process the researcher constantly compared and contrasted data to look for similarities and differences across participants' responses, always fitting codes to the data rather than forcing the data to fit the codes. In this sense, if an idea unit did not match with an existing code, a new code was created to account for that idea unit. This iterative procedure assisted the researcher to avoid superimposing preconceived categories on the data (Charmaz, 2006) and to honor the full range of participants' responses (Lincoln & Guba, 2013).

After the first stage of coding was completed, the researcher used focus coding to develop themes that allowed him to reconstruct participants' beliefs in terms of shared consensual constructions (Lincoln & Guba, 2013; Lincoln et al., 2011). According to Charmaz (2006), focus coding allows the researcher to develop a more comprehensive insight of the meanings condensed in the initial codes, as well as to synthesize and explain large segments of data. This analytic procedure involved revising and redefining the initial codes by making constant comparisons across the data and between the data and the initial codes. In this sense, the researcher made decisions regarding which of the codes constructed during segment-by-segment coding could make more analytic sense in order to reconstruct participants' beliefs. After the final themes were constructed, the researcher decided to group them into overreaching categories in order to provide a broader conceptual structure to the themes.

During this phase of the analysis the researcher used memo-writing, a technique commonly used in grounded theory inquiry to aid the researcher in writing informal analytic notes about the data, codes, and themes (Charmaz, 2006). This crucial process during both segment-by-segment and focus coding assisted the researcher in making comparisons across the data and between data and codes, as well as facilitating the articulation of analytical conjectures regarding the suitability of the themes in reconstructing participants' beliefs.

In addition, the researcher created a codebook (Creswell, 2009, 2013). The codebook contained three columns. In the first column the researcher allocated the names of themes, in the second their descriptions, and samples of raw data from where the

themes were extracted in the third column. This codebook was used for intercoder reliability and assisted the research in the analysis and interpretation of the findings.

Phase II: Comparative Analysis

The purpose of this phase of the analysis was to use constant comparison methods (Charmaz, 2006; Glaser & Strauss, 1967) to explore variations in participants' beliefs about effective classroom instruction and the behavior and characteristics of effective teachers, according to their points of enrollment in the teacher preparation program. Before the beginning of the analysis, the researcher created ID codes for all participants, and grouped them according to their points of enrollement in the program. Thus, first year participants were given an ID code in the form of F1, F2… Fn; for second-third year participants the ID codes were in the form of S1, S2…Sn; and for student teachers the ID codes were in the form of T1, T2…Tn.

According to Charmaz (2006), constant comparison methods assist the researcher in establishing analytic distinctions and making comparisons at different level of analysis. Similar to the comparison procedures used in the first phase of the analysis (i.e., data with data and data with codes), during this phase the researcher compared data with themes across participants' points of enrollment in the Teacher Education program. First, the researcher sorted the data according to the three points of enrollment using participants ID codes. Then, the research conducted a top-down iterative analytic procedure using the codebook created for the themes in the first phase of the analysis (first two columns only), and contrasted each theme to the data collected from participants in each of the points of enrollment (separately). In this sense, the researcher carried out a total of three

comparative analyses (i.e., first year students' data vs. themes; second-third year students' data vs. themes; and student teachers' data vs. themes). This procedure enabled the researcher to examine which analytic categories better synthesize and explain the data provided by participants at different points in the teacher education program, and thus explore if elementary preservice teachers' beliefs about effective classroom instruction and the characteristics and behaviors of effective teachers vary across teacher education.

Interpretation of Findings

In general, interpretation in qualitative inquiry refers to the process by which the researcher goes beyond the descriptive account of the data and attempts to make sense of the findings as a whole (Creswell, 2013). It means asking, what was the lesson learned? (Lincoln & Guba, 1985), "what does this tell me about the nature of the phenomenon of interest?" (Patton, 2002, p. 477). More specifically, the process of interpretation involves explaining and attaching significance to the findings by putting them into an interpretative framework (Patton, 2002). In this sense, it involves a reflective process by which the researcher positions his voice and perspectives in the understanding of the phenomenon studied. Accordingly, the researcher interpreted the findings by positioning himself from a constructivist/interpretive perspective. In the context of this study, the interpretations and conclusions that resulted from this process should be deemed as "tentative, inconclusive, and questioning." (Creswell, 2013, p. 187).

According to Patton (2002), interpreting in qualitative research also involves making an argument for substantive significance (somewhat the analogous of statistical significance in quantitative research). Following Patton's recommendations, the

researcher, in order to deliver such argument, included in his interpretation of the findings a reflection on the following points. First, the researcher reflected on the coherency and consistency of the data (or evidence) in supporting the findings, referring in other words to the credibility and dependability of the codes and themes in reconstructing participants' beliefs about teacher effectiveness. The second point has to do with the extent to which findings increased and deepen the understanding of the phenomenon studied. In this sense, the researcher evaluated whether the study produced a thorough understanding of participants' beliefs about teacher effectiveness. Third, the researcher also reflected on the extent to which the findings were consistent with results from other studies, thus linking findings from previous research on preservice teachers' beliefs about teacher effectiveness with those of the present study. Finally, the researcher assessed the extent to which the findings could be useful for some intended purpose (e.g., contributing to theory, informing policy). The researcher thus reflected on the relevance of the findings to the literature on preservice teachers' beliefs about teacher effectiveness, as well as potential implications for teacher education.

CHAPTER 4. FINDINGS

The purpose of this interpretive study was to develop an understanding of elementary preservice teachers' beliefs about effective classroom instruction and what they believe to be the behaviors and characteristics of effective teachers. Additionally, the researcher also wanted to explore how these beliefs may vary at different points during a teacher education program (i.e., first year students, second-third year students, and student teachers). The main study findings are presented in four separate sections. The first section contains a description of participants' beliefs about effective classroom instruction. The second section includes findings regarding participants' beliefs about the characteristics of effective teachers. The third section presents a description of participants' beliefs about the behaviors of effective teachers, and the fourth section contains an exploratory analysis of potential variations in participants' beliefs about effective classroom instruction and the characteristics and behaviors of effective teachers across the three points of enrollment in the teacher preparation program.

The findings in each of these sections are arranged into overreaching categories, which provide a broader conceptual structure to the themes extracted from the data. In this sense, each category may contain several themes. Both the categories and the themes within each category are organized from the most to the least comprehensive. That is, they are arranged according to their recurrence across the data. Furthermore, themes may

hold two or more codes, which depict participants' beliefs at a fine-grained level of analysis. Thus, findings in each of the four sections are presented according to three hierarchical levels of analysis: Categories, themes, and codes.

Additionally, the description of themes and codes are supported by several examples from the data. In the first three sections (i.e., beliefs about effective classroom instruction, beliefs about the characteristics of effective teachers, beliefs about the behaviors of effective teachers), examples from the data are identified by ID codes that were provided to each of the participants according to the order in which they were interviewed (i.e., P01, P02… P24). In the last section (i.e., variations in beliefs across teacher education), examples from the data are identified by ID codes that were provided to participants according to their point of enrollment in the teacher education program. Thus, if a quote was taken from the response provided by a participant in the first year group, it will have an ID code starting with the letter "F" (e.g., F01); if a quote was taken from a participant in the second-third year group the ID code will start with the letter "S" (e.g., S07); if a quote was taken from a participant in the student teacher group the ID code for that quote will start with the letter "T" (e.g., T02).

Beliefs about Effective Classroom Instruction

The analysis of the interview data suggested that participants' beliefs about effective classroom instruction dwell around five overreaching categories: a) the physical environment of the classroom; b) the psychological/social environment of the classroom; c) the role of the teacher during instruction; d) the role of students during instruction; and

e) types of pedagogical approaches. Following is a description of participants' beliefs according to each of these categories.

The Physical Environment of the Classroom

One of the main categories that emerged during the analysis was participants' belief regarding elements of the physical environment in an effective classroom instruction. In particular, they discussed four different themes of the classroom's physical environment – organization of the classroom, availability of resources/supplies, size, and classroom's appearance. Table 1 provides a quantitative description of the findings for this category, in terms of the frequency of themes and codes across the data.

Organization of the Classroom

According to half of participants, the way in which physical objects are arranged in the classroom (e.g., desks, tables, boards) has implications for instruction and students' learning (e.g., staying on task, paying attention, knowing where things are, etc.). For example, one participant stated,

> "Definitively organized, things need to be organized in my classroom. I like all the desk clump together, all facing the front too, because sometimes they do like a clump of four and they are facing each other, then you have kids that are not paying attention… When they are all facing the front all organized I feel that is just going to run better… How the classroom is set up is going to affect the kids and how they want to learn, I think." (P15).

Another participant echoed the same point that the classroom needs to be organized to enhance student learning.

> I think the classroom itself needs to be well organized and… Set up in a way that students can move around and not disrupt each other. If it is really crowded and disorganized, then that can affect your students, but if it is well organized then, mm… I guess, like set up for learning, then that's going to affect the students positively… I think the classroom environment is kind of like a background for what happens in the classroom, like kind of set the stage." (P17).

Table 1: Frequency of Themes and Codes Related to the Physical Environment of the Classroom

Theme	Freq.	Code	Freq.
Organization of the classroom	20	The physical environment of the classroom (e.g., desk, tables, areas) should organized and/or set up in a particular way. This may allow students to know where things, what they should be doing, being focused on learning, and/or paying attention.	12
		The classroom should have different areas/stations /centers where students can do different activities.	8
Availability of Resources/ Supplies	11	Availability of resources/supplies (e.g., Books, Materials, Manipulatives, Technology, Money).	11
Size	9	Number of students/class size.	6
		Physical space/classroom size.	3
Classroom's Appearance	7	Visual appearance of the classroom (e.g., posters on the walls, painted).	7

Another participant also expressed the need for the classroom to be structured with desks arranged in orderly fashion as highlighted by the following comment.

> "It [the classroom] should be organized, all the desks are organized where all the kids can see the board… The desk arrangement to me plays a big role in how the classroom is going to function. If things are organized, then I feel like the students can collaborate more freely, openly, and they

> won't have to worry about getting off task so much because they know what they are supposed to be doing." (P19).

In addition, preservice teachers also discussed that an important aspect of the classroom's organization was the distribution of areas, stations or centers in the classroom where students can be involved in different activities (e.g., reading, working on math problems). For example, one of the participants commented,

> "There would be places for them [the students], like in the classroom, where they can go read, or different centers… like reading centers or different places where they can go and work as groups or do different things." (P10).

The following comments also highlight similar beliefs that effective classroom instruction requires centers or stations.

> "I would like to have stations around the room, like a library, and then like a listening center, and then a math center." (P14).

> "I think it would be something that looks like open and have multiple stations that are independent, a reading station, something that includes a lot of comfy areas." (P21).

Availability of Resources/Supplies

Another element of the physical environment of the classroom that participants held as important to effective classroom instruction was the availability of resources/ supplies. Preservice teachers discussed the importance of books, materials, manipulatives, and technology (e.g., computers) in the classroom. Furthermore, they noted that having access to financial resources to buy supplies was another key aspect of the physical environment of the classroom and thus could positively influence instruction.

The following four extracts from participants' responses exemplify the belief that access to resources in the classroom is an important factor for effective classroom instruction:

> "Have a lot of books in the classroom for kids, and also a lot of different things, like manipulatives." (P04).
>
> "I think there should be a lot of resources for the kids to use, and technology." (P08).
>
> "It is always important having the right supplies… and to just having access to good equipment." (P12).
>
> "A lot of technology, like hopefully computers and a smart board would be nice, and then just like money to buy things, to buy supplies and stuff." (P22).

Size

A third element of the classroom's physical environment that participants considered as important to effective classroom instruction was size, both in terms of the number of students (or class size), and the physical space available in the classroom (or classroom size). A number of participants shared the belief that having a specific range of number of students (usually between 20 and 25 students) could facilitate different aspects of instruction, such as classroom management, interaction between the teacher and the students, and students' understanding. The following two comments highlight the importance of class size for effective teaching.

> "A small class size first of all… I feel that you get a lot more student interaction, like one-on-one, mm… you can reach more with the students, make sure they are understanding what you are saying, things like that." (P12).
>
> "20, 25 students, because like the ratio of teacher to students… it is just like harder to reach that many students 'cause everybody is at a different level and it is hard to make sure everybody is getting what they need, and

> then also I think that classroom management gets a lot harder with more students, like the behavior is harder to control." (P22).

Preservice teachers also discussed that the available physical space or the size of the classroom was an important aspect of classroom's physical environment. For example, one preservice teacher stated,

> "Having… I guess space, like I have been in a couple of classrooms that were really small, stuff was stuck up to the selling practically, and so it is better when there is more space so that students don't feel like cramped." (P17).

Another participant pointed out that the right classroom size is important for instruction to be effective and keep students engaged in the classroom.

> "Other thing would be like a good space to work with, obviously you don't want it to be to small, at the same time I feel like big lecture halls aren't really efficient sometimes, 'cause I mean, if you get to the back of the classroom you can't even hear what the instructor is trying to say." (P12).

Classroom's Appearance

Finally, the classroom's appearance was another central theme of the classroom's physical environment. These participants shared the belief that the visual outlook of the classroom (e.g., colorful, having things on the walls, posters) could play a role in the students' psychology or the motivational atmosphere of the classroom. For example, one participant commented,

> "When they go home, if their room is painted in purple they are happy about it, but if they go to school and the room is painted white, it is just a psychological effect, you know." (P15).

Another participant also expressed the importance of the classroom's appearance for making the classroom exciting as highlighted by the following comment.

> "I really like when classrooms have like tons of things on the walls… I just like when there is a lot of visuals or like different things. I think it makes the classroom more exciting and more, mm… it is better than just having a bare classroom." (P04).

The Psychological/Social Environment of the Classroom

Participants also pointed to several aspects of the classroom's psychological/social environment that could have important implications for effective classroom instruction. Specifically, they viewed feeling comfortable, openness, sense of community, diversity, and respect as important aspects of the classroom environment that positively influence teaching. Table 2 provides a quantitative description of the findings for this category, in terms of the frequency of themes and codes across the data.

Feeling Comfortable

One of the most recurrent themes of the psychological/social environment of the classroom among participants was that students feel comfortable in the classroom. Preservice teachers pointed out that the classroom environment should allow students to feel comfortable or safe while being around others, sharing their ideas/perspectives, participating, or making mistakes.

For example, the following comment from one of the participants highlights the importance of feeling comfortable in the classroom for students' learning.

> "I think they [students] should feel comfortable… I think it is important to feel comfortable in your surrounding, so that way when the material isn't

> necessarily comfortable, it is more challenging, it is more difficult, more abstract maybe, that way you still have that security in your environment, so that way you are willing to actually try and be vulnerable and work at learning that difficult or challenging concept." (P09).

Table 2: Frequency of Themes and Codes Related to the Psychological/Social Environment of the Classroom

Theme	Freq.	Code	Freq.
Feeling Comfortable	19	The classroom/school is be a place where students feel comfortable or safe being around others, sharing their ideas/perspectives, participating, or making mistakes.	11
		The teacher allow/facilitates students feeling comfortable in the classroom.	5
		Students feel physically comfortable or "comfy" in the classroom.	3
Openness	6	The classroom environment is receptive to new ideas/opinions, backgrounds and/or experiences, and includes students being open-minded/open to new things.	6
Sense of Community	6	Having a sense of community in the classroom that would allow students to relate to one another, and connect their home and school lives	6
Diversity	5	Having students from different cultural/economical/social backgrounds in the classroom.	5
Respect	3	Having respect between the students and the teacher and /or among students.	3

Other participants echoed the belief that effective classroom instruction requires students to feel comfortable sharing ideas and making mistakes in the classroom.

> I want everyone to feel comfortable… I want them [students] to feel confident enough to share their opinions with everyone… I think if they are uncomfortable they would come to work and they don't know, they may just stop and wait for me to say it for them, which it is not really a good way for them to learn, but I think if they are like comfortable enough to try it in front of the classroom, even though it might be wrong, but like they learn a lot more from that." (P22).

> "I think it is a big thing that the children are comfortable sharing what they think and what they learn, and what they want to do and what they want their learning to go." (P23).

Similarly, other participants shared the belief that feeling comfortable in the classroom had important implications for students learning; however, the teacher plays an important role in having a direct effect on the psychological/social environment of the classroom, thus enabling students to feel comfortable. For example, one participant stated,

> "If you [teacher] create an environment where they [students] know that they can ask questions and be willing to answer questions, so if I think that my teacher is going to shout me down every time I try to answer a question, if I think, 'oh well, I better not answer that questions because they will just yell at me if I am wrong', then I am not going to want to, you know, grow or ask questions, or even answer questions in class. So you need to create an environment where you can take risks and you can try new things and not be afraid of failing." (P12).

Another participant highlighted the same belief stating, "They [teachers] constantly make it very comfortable, so the environment is really good for the kids… I guess from the beginning just like, to set everything straight so like having students feel comfortable." (P24).

Some participants also shared the belief that feeling comfortable means to have areas in the classroom where students can feel "comfy", "homey", or just physically comfortable. For example, one of the participants pointed:

> "…A type of area where students can go and it just feels like homey and it feels nice and they are comfortable being there doing like more relaxed things." (P21).

Openness

Participants also considered openness as an important aspect of the classroom's psychological/social environment. Participants noted that a key aspect of effective classroom instruction was openness in a classroom that was receptive to new ideas, backgrounds and/or experiences. For example, one participant commented,

> "The [classroom] climate would be open to differences in opinion and differences in backgrounds… kind of accepting of the idea that there is not going to be a right-or-wrong." (P03).

Participants also discussed that students need to be open to new things (e.g., ideas experiences, classroom activities, etc.). One participant pointed,

> "You know, just [students] being open to new things… Be willing to listen to other people's ideas and types of experiences… Being open to like new, like activities in the classroom will allow you to try more things and learn in different ways." (P01).

Another participant similarly highlighted the importance of students being open to new ides (open-minded) and a classroom environment that is supportive of different ideas/opinions, which should be deemed as equally important.

> "I want them all to be open-minded, so at the beginning I am going to say like, 'your opinion is not more important than that person', you know, that kind of thing… The environment would be supportive of that… just like open to all types of ideas." (P16).

Sense of Community

A third theme related to the psychological/social environment of the classroom that preservice teachers brought up was a good sense of community in the classroom. Specifically, preservice teachers shared the belief that having an environment that allowed students to feel being part of a community was an important aspect of an ideal classroom. For example, one participant commented,

> "I think is an environment where all the kids feel like a community… I think it is really important making the children feel that they are in a community." (P08).

Other participants pointed that this sense of community would allow students to relate to one another, as well as to connect their home and school lives.

> I think community is very important, I don't know, some people call it like a trust circle or something like that, but beginning the day out where all the students come together, relate to one another." (P05).

> "I think it [the classroom] would be very supportive, like a sense of community, and there would be a connection between students home lives and like their school lives." (P16).

Diversity

Another aspect of the psychological/social environment that was recurrent in some of participants' responses in relation to an ideal classroom instruction was diversity. Participants shared the belief that having students come from different cultural, economical, and/or social backgrounds in the classroom could allow students to have contact with ideas different from their own, and this would be beneficial for developing tolerance and learning from others. The following participant response exemplifies this belief:

> "I think an ideal classroom instruction would have kids involved from different types of backgrounds, you know, like socio-economic, cultural backgrounds, all of that, 'cause again, it is beneficial for me as a teacher and for the kids to kind of experience the different, you know, backgrounds that their peers have… I think that there would be tolerance and, you know, just being accepting of other backgrounds, cultures, that kind of thing." (P16).

Another participant similarly highlighted that having diversity in the classroom is important for students to learn new things.

> "Students that are diverse, like I don't want one type of student, so a bunch of different types of students… I just think that with different people you can learn new things, like I really like cultures and that's really interesting to me, so just like getting different students from different backgrounds. It is always cool just to learn about the types of things they do, and then learning how students are different from each other but also how they are similar too… I think that is really cool for students to see." (P22).

Respect

Finally, participants considered respect between the teacher and the students and/or among students to be another important aspect of the psychological/social environment of the classroom. They noted that having a respectful environment could lead students to be more open to new ideas and be more motivated to learn. One of the participants commented,

> "A respectful environment, mm… like even though the kids are maybe like only eight, the teacher, if you show respect for them, the kids will show respect back for you… Having that could lead to more openness and kids being more willing to try different things… if the teacher is not respectful of their ideas, their opinions, the way they do things, you know, they are not going to be open for learning, and they won't get as much out of everything if they shut down." (P04).

The Role of the Teacher During Instruction

A third category that emerged from the data was the role the teacher needs to play during an effective classroom instruction. Participants made reference to five major themes: facilitating/guiding, providing structure, establishing relationships, maintaining control/discipline, and making learning interesting, exciting and fun. Table 3 provides a quantitative description of the findings for this category, in terms of the frequency of themes and codes across the data.

Facilitating/Guiding

The most recurrent of these roles among participants' responses was facilitating/ guiding. Participants shared the belief that the teacher's role during instruction was to facilitate students' learning without being the authority that parts knowledge/information to the students. Rather, the teacher should allow students to have some control over their own learning (e.g., practicing, experimenting, discovering, discussing). The following comment from one of the participants exemplifies this belief.

> "I think the role of the teacher should be as a facilitator. I think more like the teacher has a goal but they are not just standing up there like, "this is how you do it", more like inquiry and like discovery going on in the classroom by the students, instead of just telling them the information." (P02).

Similarly, another participant highlighted the importance of the role of the teacher as a facilitator of students' learning.

> "I am looking at the role as a facilitator. I am very big on facilitating and discussing and getting some opinions, mm… and figuring out… making sure the kids understand." (P05).

Table 3: Frequency of Themes and Codes Related to the Role of the Teacher

Theme	Freq.	Code	Freq.
Facilitating / Guiding	12	The teacher guides/facilitates students learning without being an authority.	10
		The teacher facilitates/provides knowledge to students.	2
Providing Structure	11	The teacher provides students with directions/rules/expectations/goals to follow.	9
		The teacher provides students with directions/rules/expectations/goals to follow, but gradually let them do things on their own.	2
Establishing Relationships	7	The teacher establishes good relationships with students and/or shows interest/cares about students' personal lives.	5
		The teacher needs to sort of balance between being a teacher and be a friend	2
Maintaining Control / Discipline	5	The teacher is in control of and/or maintains discipline in the classroom.	5
Making Learning Interesting, Exciting, Fun	4	The teacher makes learning interesting and exciting for students by changing the set up of the classroom/instruction from time to time, and by making things fun.	4

Another participant echoed the same point that the role of the teacher should be to facilitate students' learning, while allowing them to have some control over their learning.

> "The teacher should always be like a facilitator, someone who like… she is in the front and she is talking and she is teaching the kids, but then she gives kids the practice, so that's a time kids are on they own in the stations, and then the teacher is walking around helping them if they need it, if they need like guidance… so someone like a facilitator." (P24).

Some participants, however, considered that the role of the teacher should be that of a facilitator or provider of knowledge/information. Instead of providing students with control over their learning, these participants shared the belief that the main role of the teacher was to make sure that students have access and retain the information. One of these participants commented,

> "I would just say a facilitator of knowledge… Just making sure that the students are accessing that knowledge that you are giving them, and also retaining it… what I would assume that a teacher would be in that position for is to teach and is to, you know, give knowledge to students and be able to teach some new subjects." (P21).

Providing Structure

Another group of participants shared the belief that the main role the teacher needs to play for an instruction to be effective was to provide structure. In this sense, participants shared the belief that the teacher has to provide students with directions, rules, and/or goals to follow during instruction so that it "runs smoothly" and students can remain on task. For example, one participant stated,

> "She [the teacher] is like the leader of the classroom… provides directions, like makes sure students know exactly what need to be doing, like at all times, and make sure everything is always clear. You know, I like structure, cause it is really easy for younger kids to get off task." (P20).

Another participant pointed out that the role of the teacher was to provide students with goals so things can run smoothly in the classroom.

> "I just think, at least for me it just like make me feel at ease if I have a general picture of what I want something to look like, and not just to stay exactly on track, but… It is like a goal I guess, for every day… So if they [the students] have at least a slight idea of how the classroom runs or

> what's going to happen everyday, I think just things would run more smoothly." (P11).

Similarly, another participant emphasized that for things to run smoothly in the classroom the teacher has also to provide students with rules so they know what to do in the classroom.

> "…Like a list of the rules, the classroom rules, that kind of thing. That is important so they can see, they can like, 'oh, what am I doing wrong? Am I doing what I am supposed to be doing?' A list of rules and everything should run smoothly." (P19).

Another participant also highlighted the importance of the role of the teacher as to provide students with rules in order to keep things in order within the classroom.

> "Having rules and the teacher abiding by those rules… Students need structure and need to realize that once you say something good or bad… I think that as students they look up to the adults to create that order in the classroom, and when is chaotic and you don't have a certain type of order within the classroom it can create chaos in other areas as well." (P21).

Two of the participants held a similar variation of this belief. They also considered that the role of the teacher was to provide students with directions and rules to follow during instruction, but added that the she/he needs to gradually let students do things on their own. For example, one of these participants stated:

> "I think giving them [the students] more structure is important, but also kind of sitting back to see where they can go with things, like testing out their limits. So like kind of giving them that structure, like kind of setting the limits right away, telling them, "this is what you are going to do, this is what I expect you are going to do, and if you don't do it this is what is going to happen"… just giving them that little box to fit in, and then as they learn, as they learn the schedule and the habits and whatever, then you can kind of like let them do their own thing." (P16).

Establishing Relationships

A third role of the teacher that participants believed as important was establishing relationships, particularly with students. Preservice teachers shared the belief that the teacher should establish a good relationship with students and show interest in their personal lives for effective instruction. This would allow the teacher to make the material more relatable to students' lives and make them more willing to come to class, participate, and learn. For example, one participant commented,

> "They [teachers] need to also establish a good relationship with them [the students] so that way students don't hate them, otherwise they won't want to come to class or learn from them." (P09).

Another participant similarly highlighted the importance of establishing a good relationship with students and making the instructional material more relatable to their lives.

> "If you have a good connection with your students they will be more willing to share with you… Just having that nice relationship with your students, and being able to talk with them about what's going on in their life… In that sense you have to be aware of what they do outside of school too, not just family life, but if they are in any sports, or if they are in plays or something like that, then you can try to correlate it back to their own lives and make it relatable to them, so making the educational material relatable to them, that's always important." (P12).

However, even though some participants also discussed the importance of establishing good relationships with the students, they stated that the teacher should primarily "be there" to teach and help students to learn. One of the participants commented the following based on a reflection she made of a previous experience:

> "I would say that about another teacher, I was like, 'she had a personal relationship with everybody and that's cool and dandy, but at the end of the day she wasn't there to be our friend, she was there to teach us and give us assignments that actually helped us learn'." (P07).

Maintaining Control/Discipline

Preservice teachers also shared the belief that the primary role of the teacher should be that of maintaining control/discipline during instruction. According to this belief, the teacher should always be in control of the discipline in the classroom so students can concentrate on learning. For example, one participant stated,

> "The teacher would clearly be in control… The teacher does obviously need to have that disciplinary role, so that way the students are going to process it uninterrupted. I do think that they have to establish that they are in change, otherwise I think that students will step all over them and intentionally acting in that way, and that will disturb not only their learning, but also the students around them learning." (P09).

Another participant echoed the same point that maintaining discipline in the classroom is key to effective teaching.

> Discipline, children having an understanding of action-consequences… I think those are the biggest things to effective instruction, to reinforce consequences. Especially with the younger kids you want to automatically shout things out, you have a chance to reinforce what behaviors are expected, you know, what consequences might be." (P05).

Making Learning Interesting, Exciting, and Fun

Finally, another theme that emerged from the data was a shared belief that one of the main roles of the teacher during an effective instruction was making learning interesting, exciting and fun. For this group of preservice teachers, their role as future educators would be to make learning interesting and exciting for students by changing the set up of the classroom or the instruction from time to time, or just by "making things fun", which would positively impact students' motivation and learning. The following quote from one participant exemplified this belief:

> "Making stuff interesting and exciting… I don't like just having one set up for the entire year. I like a teacher who moves things around, see what works. I think there are certain kids who as they go in there and they know what's going to happen, they know what they are going to do in the classroom and they are going to sit in the same chair, and see the same person, and write down notes from the same projector everyday, they are going to get bored, they are not going to be excited, they will fall sleep… It could be a dull subject or it could be any subject, but if you can make it, if you can make them [the students] believe that it is exciting and it is fun, you can make anything fun, and I think they will learn." (P06).

The Role of the Students During Instruction

Just as the effectiveness of instruction depended in part on the different roles that the teacher plays in the classroom, participants also shared the belief that students could play important roles in the classroom. Specifically, preservice teachers suggested that students have four different roles during instruction: Having a disposition to learn, being a passive participant, being an active participant, and being a responsible learner. Table 4 provides a quantitative description of the findings for this category.

Disposition to Learn

One recurrent theme that emerged was preservice teachers' shared belief that students need to have a disposition to learn. In this sense, students should be ready, excited, interested, willing, or motivated to learn. For example, one participant stated,

> "If they [students] don't come to school wanting to learn, they are not going to." (P15).

Similar beliefs were echoed in the following statements,

> "Everyone [students] comes ready to learn and be there for that… All the kids will be hard working and want to learn." (P10).

> "I think that they [students] should be definitively motivated to learn, they kind of have to be willing to explore all sorts of different topics." (P12).

Table 4: Frequency of Themes and Codes Related to the Role of Students

Theme	Freq.	Code	Freq.
Disposition to Learn	12	Students should be in disposition to learn. They should be ready, excited, interested, willing, or motivated to learn.	12
Passive Participant	6	Students absorb/receive information/knowledge, pay attention to the teacher, or simply "be there" in the classroom.	6
Active Participant	6	Students should be actively participating in the classroom and be open to and engaged in activities.	6
Responsible Learner	2	Students should be responsible for their own learning/education.	2

Another participant elaborated on her belief discussing that regardless of the classroom environment or what the teacher could do, if the students are not open to learning they are not going to learn, stating:

> "I think that they [students] need to be open and ready to receive that knowledge. If the students is not ready to learn, or open to learn, or willing to learn as well, no matter what different type of space I use, or all type of motivational tools I owe and everything, like the students are not going to learn unless there are open and ready to learn as well." (P21).

Passive Participant

Some participants also shared the belief that the primary role of the student during instruction should be that of a passive participant. According to this belief, students

should be absorbing/receiving information/knowledge, paying attention to what the teacher is saying, or just "be there" in the classroom. For example, three of these participants stated the following:

> "I think the students have to absorb the information." (P08).
>
> "They [students] should be like present in the classroom, just mentally and physically, 'cause they are not going to learn anything if they are not there." (P12).
>
> "Their [students] role is to come to school and give their teacher their attention." (P15).

Active Participant

On the contrary, a group of preservice teachers shared the belief that the role of students should be an active participant during instruction. In this sense, preservice teachers considered that students should be actively participating in the classroom and be open to and engage in activities (e.g., discussion), instead of only listening to the teacher. For example, one preservice teacher stated,

> "I think they [students] should be like an active participant each day… I don't think it is effective to just be watching them all the time and just have them listening and writing… So, I think just that they would be an active participant in they own way." (P11).

Similarly, another preservice teacher pointed out that the role of the students during instruction is to be open to and participate in activities.

> "I think they [students] definitively have to be open to doing activities, like you need them to be actively doing things. So I think that a lot of participation, mm… yeah, mostly participation." (P22).

Responsible Learner

Finally, another theme that emerged was participants shared belief that the main role of the students during instruction was to be a responsible learner. Specifically, preservice teachers stated that in order for students to learn they have to be responsible for their own education and be in control of their learning. For example, one participant noted that students need self-regulation to be in control of their own learning, stating:

> "Students would show responsibility for their own learning and a lot of self-regulation, because I think it is more important for students to be able to learn on their own and realize that they are in control, 'cause it make it more meaningful to them and they can retain the information more." (P09).

Types of Pedagogical Approaches

The fifth overreaching category that emerged from the data regarding the effectiveness of instruction was the type of pedagogical approach employed in the classroom. Participants made reference to three main pedagogical approaches: Collaborative/group-learning instruction, differentiated instruction, and discussion/ inquiry-based instruction (see Table 5).

Collaborative/Group-Learning Instruction

The most recurrent pedagogical approach among participants' responses was collaborative/group-learning instruction. Specifically, preservice teachers discussed that effective classroom instruction involved students working into groups, collaborating with their peers, and/or learning from each other, which can benefit students' learning. For

example, one participant pointed out that through collaborative instruction students can benefit more by working with advanced peers than with the teacher, stating:

> "I think that you see like a lot of collaboration going on… because students, some are smarter than others and they can help the students. Sometimes even one student can help another student like better than the teacher can." (P02).

Table 5: Frequency of Themes and Codes related to Types of Pedagogical Approaches

Theme	Freq.	Code	Freq.
Collaborative / Group-Learning Instruction	11	Students work in groups and/or collaborate with their peers, learning from each other.	9
		Teacher and students can learn from each other.	2
Discussion / Inquiry-Based Instruction	7	The teacher can structure the instruction, but always provide space for students to exploring/experimenting/discussing things on their own.	7
Differentiated Instruction	6	Instruction/classroom varies depending on what students bring to the classroom (e.g., background, knowledge, skills), as well as students' educational needs.	6

Another participant also highlighted the importance of collaborative instruction for students' learning, and emphasized that students sometimes can learn more from their peers than the teacher.

> "I think it is really important to have like peer interaction, so like students helping other students too… because sometimes when you are younger you just listen to your friends more. You can also learn from who is sitting next to you, maybe they know something that the teacher didn't catch on, because they are the same age, they are in the same age group." (P24).

Similarly, another participant pointed out that working in collaboration with peers during classroom instruction can be beneficial for students' learning.

> "Collaborating with their peers is more ideal than like do everything by yourself… they [students] can talk to each other, you know, even if it is something as simple as doing a math problem, you know… they have their strategy that they use, but they can also learn from the person that is sitting next to them, so is kind of working together." (P16).

In addition, participants also conceived this pedagogical approach from another perspective with both the teacher and the students collaborating and learning together. When participants were asked what they mean by having a collaborative-type of instruction they stated the following:

> "They [teachers] are learning from the students as well as the students are learning from them, it goes both ways." (P21).

> "I feel like teachers can learn as much from the students as the students learn from the teachers." (P23).

Discussion/Inquiry-Based Instruction

A group of participants also shared the belief that an effective pedagogical approach was to have discussion/inquiry-based instruction in the classroom. Specifically, participants believed that the structure of the instruction should provide space for students to explore, experiment, and/or discuss things on their own. For example, one participant commented that instead of lecturing the students or having them look at textbooks, the teacher should provide students with opportunities to discuss/explore things on their own.

> "I wouldn't want to be just stand up and lecture to the students, or like have them all look at the textbook and like we read the textbook. I would rather have it be, like a lot of discussion rather than me just telling them what they need to know, you know, and with that is like having a discussion or like giving them some sort of group work, independent work

> or something where they can explore on their own or practice the skill or concept or whatever." (P04).

Another participant pointed out that allowing students to explore things on their own or providing them with different ways to learn during instruction can trigger their motivation/interest.

> "The teacher should be teaching, but at the same time I don't want to be like lecturing, like I am really into like hands-on activities and like exploration type of things. I think it is boring, just like give them [students] another way to learn, like another way to be accessible to them… they [students] will be more interested in doing an experiment maybe than like reading about an experiment, like hear me talking about an experiment." (P22).

Differentiated Instruction

Finally, preservice teachers also thought that differentiated instruction in the classroom was an effective pedagogical approach. These participants believed that in order for instruction to be effective it should vary depending on what students bring to the classroom (e.g., background, knowledge, skills), as well as their educational needs. For example, one participant commented,

> "I don't think there is one type of classroom that will benefit all students… I think that differentiation is the term that I should use, you know. So for instance, if you have a classroom and the students have a lot of background and family influence in education, so for instance if the parents read a lot to them and things like that, then you probably set up more independent reading centers, but if you have a classroom where the students, mm… don't really have emphasis at home in education and then they probably don't have as much independent reading." (P03).

Another participant elaborated on her belief discussing that the teacher should incorporate different techniques/methods during instruction based on students' learning styles, stating:

> "Incorporating a lot of different instructional techniques, things like that, 'cause you have different learners and everything… some kids might learn well in a lecture, and some kids learn well like in a power point presentation or something… or just students who don't learn the same way. You have to incorporate a lot of different methods." (P12).

Beliefs about the Characteristics of Effective Teachers

The analysis of the data suggested that participants' beliefs about the characteristics of effective teachers were concentrated around four overreaching categories: a) teacher persona; b) teacher motivation; c) teacher control; and d) teacher change. Following is a description of participants' beliefs according to each of these categories.

Teacher Persona

Preservice teachers in this study considered that teacher persona was an important characteristic of effective teachers. This category encompassed participants' beliefs regarding personal attributes of an effective teacher that are related to how she/he approaches others at a personal level, and the implications that these attributes may have for student growth and academic achievement. Participants made reference to three main personal attributes related to the teacher's persona: Friendly/welcoming, caring/nurturing, and open/accepting. Table 6 provides a quantitative description of the findings for this category, in terms of the frequency of themes and codes across the data.

Table 6: Frequency of Themes and Codes related to Teacher Persona

Theme	Freq.	Code	Freq.
Friendly/ Welcoming	11	An effective teacher is a friendly/ approachable person who listens/talks to students about their academic and/or personal concerns.	6
		An effective teacher is welcoming/nice and can "get along" with others.	3
		An effective teacher keeps a balance between being friendly and being firm/in charge.	2
Caring/ Nurturing	11	An effective teacher cares / "wants to be there" for students at a personal level.	11
Open/Accepting	4	An effective teacher is open to new experiences, to students' ideas, and/or accepting of all students.	4

Friendly/Welcoming

One recurrent personal attribute found among participants' responses regarding teacher persona was being friendly/welcoming. Preservice teachers shared the belief that an effective teacher is a friendly, approachable person who is willing to listen/talk to students about their academic and/or personal concerns. For example, one participant commented,

> "Someone [effective teacher] who is a good listener… if you are able like to listen to other students' ideas, you know, they will be able to problem solve themselves. Listening to like any school concerns that they have, but also listening to any personal life concerns." (P01).

Another participant echoed the same point that being someone friendly, who is willing to listen and to whom students can talk to about school or home related things, is a key characteristic of an effective teacher.

> "You want to be like friendly... like be someone that they [students] can talk to if they need help or something... even if you are having a problem you want a friendly teacher, that you know you can talk about any problem, like if it is school related or like home related... I guess it is just like approachable, like you can just talk to them about pretty much like anything. You know, they [effective teachers] are not going to, I don't know, just like push you away or whatever, like they are going to want to listen to you." (P18).

Some preservice teachers discussed a slightly different perspective on this particular personal attribute. They shared the belief that an effective teacher should be someone who is welcoming or who can "get along" with others in general. For example, one participant stated:

> "They need to be welcoming to people, definitively friendly… like being able to get along with all sorts of people, which I guess is kind of what I meant by friendly." (P15).

Some other participants shared the belief that even though effective teachers should be friendly and welcoming, they should also "be in charge". In other words, an effective teacher needs to always keep a balance between being friendly and being firm with the students. The following quote exemplifies this particular belief:

> "They should be friendly, but still be in charge. The students know that they are not just like their friend, they are their teachers… I think you need to be friendly so that students know that they can talk to you about some of their questions… but then they need to know that you are in charge. Friendly and being in charge, that's important." (P20).

Caring/Nurturing

Another personal attribute regarding effective teachers' persona that was recurrent across the data was being caring/nurturing. Specifically, preservice teachers reported that an effective teacher is someone who cares or "wants to be there" for the students,

particularly at a personal level. In this sense, participants shared the belief than an effective teacher has to be concerned about her/his students' personal life and not only about their academics. For example, one participant stated,

> "Someone [effective teacher] who is caring... you need to show them [students] that you are not only caring about their education but like about them as a person. So caring will be like the number one." (P01).

Other preservice teachers expressed similar ideas as highlighted by the comments below,

> "That would be caring… Meaning you care about your students… the things that are happening in a child or student's life that are not related to academics affect them academically. So, showing that you care about that can go a long way with the student." (P04).

> "I would say caring. I think caring because your kids need to know that you care about them, because... just that if they know you care about them, then they will care more." (P11).

Open/Accepting

Some participants also noted that an effective teacher is someone who is open/accepting. According to this belief, an effective teacher is open to new experiences, to students' ideas, and/or accepting of all students. For example, two of the participants stated the following:

> "Just being open. Like having them [students] be willing to share with you things in their life, things like that, that's always important. Just being accepting of all of your student." (P12).

> "They [effective teachers] need to be open. You know, that sometimes is hard, open to new experiences, open to change." (P15).

Teacher Motivation

Teacher motivation was another major category that emerged from the data regarding the personal attributes of effective teachers. Participants referred to four main themes: Excited, passionate, positive, and fun/humorous. Table 7 provides a quantitative description of the findings for this category.

Table 7: Frequency of Themes and Codes related to Teacher Motivation

Theme	Freq.	Code	Freq.
Excited	5	An effective teacher is excited about learning and teaching and exhibits an upbeat/exciting personality.	5
Passionate	4	An effective teacher is passionate about teaching, "wants to be there"	4
Positive	4	An effective teacher has a positive personality/ attitude.	4
Fun/Humorous	3	An effective teacher is fun/humorous.	3

Excited

The most recurrent of these themes across the data was being excited. Participants shared the belief that an effective teacher is someone who is excited about teaching and learning, or who has an upbeat/"bubbling" personality. The following quote from one of the participants exemplify this particular belief:

> "I would think… when I think of what my ideal teacher in my mind would be, I think of somebody who is social and has like a bubbling personality, like really happy, upbeat type of personality." (P21).

Other participant highlighted the importance being excited about teaching and learning for students' motivation.

> "Their [effective teachers] excitement of learning and of teaching… if you are bored and you hate what you are doing, then your students… how are they supposed to be motivated? If you are able to be engage and excited about what you are doing, then I think that will help students to become engage and excited." (P03).

Passionate

Another personal attribute of an effective teacher that participants considered as important was being passionate. Specifically, they discussed that a teacher is someone who is passionate about teaching, "wants to be there" and wants her/his students to learn, and this in turn could make students to be more motivated to learn. The following two quotes highlight participants' view:

> "I think like passion for the job… I think that the teacher needs to have passion for what they are doing and want to do their job and want to teach students, I think that shows through their personality and through their teaching. If you show passion for what you are teaching, and they [the students], you know, are going to show interest in it because you want to make them want to learn." (P04).

> "You could just see that she [effective teacher] wanted to be there, you know, she wanted to be in the classroom, she wanted to be teaching the material, which made me wanted to learn more because she was so passionate about that." (P09).

Positive

Participants also shared the belief that being positive was one of the most important personal attributes of an effective teacher. In this sense, an effective teacher is considered someone who has a positive attitude and can always see the

positive or "bright side of things", which can in turn impact students' motivation. For example, one participant stated, "Always having a positive attitude, I think that can really impact your students as well." (P17). Another participant discussed that teacher's negativity would be discouraging to students, stating:

> "Being a positive person, I think that would be important. If you are complaining the whole time in your classroom, I wouldn't want to be in there personally... Being positive is a big thing, and it is really in all grades." (P12).

Fun/Humorous

Finally, another personal attribute of an effective teacher that participants suggested as important was being fun or humorous. Participants shared the belief that an effective teacher is someone who has a good sense of humor, can make jokes, and is willing to incorporate that into the classroom. One of the participants stated the following based on a reflection she made on a previous experience with a teacher she considered as effective:

> "You know, when someone is funny you want to listen to them… This teacher had put on a humor into the class, like doing jokes every now and then that were really funny and related to the class. That was a very memorable experience because it was funny, like those kind of things like stuck out in your mind." (P01).

Teacher Change

Another category that emerged from participants' responses regarding the characteristics of effective teachers was teacher change. This category included beliefs of participants about effective teachers' dispositions toward new experiences that might

demand some sort of cognitive or behavioral change. Specifically, three themes highlight participants' beliefs related to teacher change: Willingness to learn/improve, flexible, and creative. Table 8 provides a quantitative description of the findings for this category, in terms of the frequency of themes and codes across the data.

Table 8: Frequency of Themes and Codes related to Teacher Change

Theme	Freq.	Code	Freq.
Willingness to learn/improve	8	An effective teacher should be a person willing to continuously learn and grow as a teacher and improving her skills/knowledge, either by working individually or with others (e.g., students, teachers).	8
Flexible	4	An effective teacher has to be able flexible, especially in changing her/his plans when something does not go as planned.	4
Creative	3	An effective teacher is creative in the way she/he arranges the instruction and this can have implications for students' motivation/interest in the instruction.	3

Willingness to Learn/Improve

Participants shared the belief that an effective teacher is someone who considers her/himself as a learner and is willing to continuously grow and improve on her/his skills and knowledge. The following quotes from participants exemplifies this belief:

> "An effective teacher should be a student… They are not going to be in the same place as a kindergartener, but they are also learners themselves. I

> think that's important because that just shows that you are always trying to improve your instruction." (P03).
>
> "I think that they [effective teachers] also have to be willing to grow, I think that that's one of the most important things. Teachers have to continue to learn new things, learn new ways, because one class is never going to be like the other, and one student is not going to be like the next student, before and after. So, one that is willing to grow." (P21).

Another participant highlighted the need for teachers to be learners, as well as to adapt their instructional strategies, learn new technologies, and not get stuck in the same routine, stating:

> "The teacher needs to be continuously a learner, always a learner, they are not just the teacher, they are always learning, so I mean, there is always a new way to teach math, and there is always a new version of a book, or things like that, and I think that if the teacher gets stocked in their ways, they are not going to learn the new technology that comes out or things like that." (P23).

Flexible

A second characteristic of an effective teacher that participants considered as important was being flexible. Participants shared the belief that an effective teacher is someone who has to be flexible, especially in changing her/his plans when something does not go as planned. For example, two participants stated:

> "Someone [effective teacher] who can react quickly, like as a teacher you never know what's going to happen, so you have to be able to respond like to different situations, and like be able to change your plans easily, like flexible." (P18).
>
> "Being flexible… like a lot of times something won't go the way you planned and I think good teachers are able to think of something really quickly to like… if something is going wrong they could change something." (P22).

Creative

Participants also considered being creative to be another important characteristic of an effective teacher. Participants discussed that an effective teacher is someone who is creative in the way she/he arranges the instruction and this can have implications for students' motivation/interest in the instruction. For example, one participant stated the following:

> "I guess being creative... Like just being creative in your lessons and like in the way that you are teaching. Even if you are teaching like math or something you don't want to like teach math the same way every single day… kids are not going to be interested and not like want to do it." (P18).

Teacher Control

Another category that emerged across participants' responses regarding the characteristics of effective teachers was teacher control. This theme embodies participants' beliefs about effective teachers' personal attributes related to internal and external control, and the implications that these personal attributes may have for student growth and academic achievement. Specifically, two themes highlight participants' beliefs related to teacher control: Organized and patient. Table 9 provides a quantitative description of the findings for this category.

Organized

Being organized was the most recurrent of these personal attributes across the data. Participants share the belief that an effective teacher is a person who is highly

organized, meaning that he/she always knows where things are, is well prepared for instruction, and/or makes plans ahead of time. For example, one participant commented,

> "To be effective you have to have, like… organization, so you have to be organized, you have to have all your lesson lined up. I think organization and knowing your lesson plans is highly effective." (P19).

Table 9: Frequency of Themes and Codes related to Teacher Control

Theme	Freq.	Code	Freq.
Organized	8	An effective teacher is organized (e.g., knowing where things are, be well-prepared/plan ahead of time)	8
Patient	6	An effective teacher is patient, sometimes to avoid frustration/ annoyment and/or because that characteristic is necessary when working with younger kids.	6

Another participant highlighted the need for teachers to be organized in terms of knowing where to find things in the classroom and being well-prepared for class in order to avoid wasting instructional time, stating:

> "They [effective teachers] should be someone that is organized… I think you have to be organized because you are trying to deal with like 20 students, maybe even more sometimes, and if you can't have everything in order, like if you want the students to work on a worksheet and you can't find that worksheet then that is wasting time that they need to learn, so I think it is important that you need to stay organized and that you need to know where everything is and like what you are doing, like have a schedule, 'cause you can't just like… you can't show to school and not know what are you are going to do, you have to like know ahead of time, having lesson plans." (P18).

Patient

Finally, some participants also discussed that an important personal attribute of an effective teacher is to be patient. In this sense, an effective teacher was considered someone who is in control of her/himself and tries to avoid feeling frustration when working with students/kids. For example, one participant commented,

> "Personally, effective teachers I think need to be patient, especially if you are teaching elementary school… patience is something that you definitively have to have because kids can be frustrating. So being patient I think is also important." (P04).

Another preservice teacher pointed out that an effective teacher has to avoid getting frustrated and be patient when things do not go as planned during instruction.

> "You are going to be someone who has a lot of patience. Probably where patience comes into is where, what works for you and what had worked in the past for other students, or even for this group of students, might not always work and so then you have to try to figure out, 'okay, what can I do to change it', instead of just getting frustrated like, 'why aren't the students understanding it? This is a beautiful lesson'." (P03).

Beliefs about the Behaviors of Effective Teachers

Participants' beliefs about the behaviors that effective teachers commonly exhibit in the classroom/school dwell around three overreaching categories: a) student-related behaviors; b) instruction-related behaviors; and c) control-related behaviors. Following is a description of participants' beliefs according to each of these categories.

Student-Related Behaviors

This category involved participants' beliefs regarding behaviors of effective teachers that are predominantly focused on students' growth and achievement.

Participants referred to three behaviors: Knowing/understanding students, helping/ assisting students, and challenging students. Table 10 provides a quantitative description of the findings for this category, in terms of the frequency of themes and codes across the data.

Table 10: Frequency of Themes and Codes related to the Teacher's Student-Related Behaviors

Theme	Freq.	Code	Freq.
Knowing/ Understanding Students	15	An effective teacher understands/thinks about students' academic needs.	5
		An effective teacher takes time to know her/his students on a personal level (e.g., names, personal interests).	4
		An effective teacher relates instructional content to students' to students' personal interests or things that are relevant to them.	3
		An effective teacher knows what students are struggling with, their strengths and weaknesses.	3
Helping/ Assisting Students	5	An effective teacher is passionate about teaching, "wants to be there"	5
Challenging Students	5	An effective teacher has a positive personality/ attitude.	5

Knowing/Understanding Students

The most recurrent of these behaviors across the data was knowing/understanding students. Majority of participants shared the belief that effective teachers are those who

show concern in knowing and understanding their students. Some preservice teachers specifically shared the belief that an effective teacher is one who understands and reflects/thinks about students' learning and needs. For example, two of the participants stated the following:

> "I would think understanding, understanding their [students] needs, why they are thinking in that manner, why are these kids doing math on this way and why is this person doing it this way but still getting the same result… Constantly thinking about your students, and thinking about what they need." (P19).

> "I think an effective teacher needs to be understanding of the children and how they are learning and how they are growing… I think teachers need to be aware of how their kids learn best." (P23).

Additionally, some participants also discussed that an effective teacher has to take time to get to know her/his students on a personal level (e.g., learn students' names, learn about their personal interests and background). One of these participants commented the following:

> "An effective teacher would also do their research on the kids, to know what their interests are, you know, what things really drive them. I think a teacher should be understanding... understanding of backgrounds and different cultures." (P16).

Some participants also shared a similar belief, however they considered that an effective teacher not only has to know about her/his students' interests, but also has to relate the instructional content to those interests and other things that might be relevant for students. One participant stated the following:

> "Teach something to connect to their [students] lives, so if your teaching a subject and they can relate it maybe to a popular TV show, relate that so they understand… responding to interests that she knows students have, the most effective way of learning is through interest." (P13).

Participants also focused on the importance of knowing about students' strengths and weaknesses. In this sense, for these participants an effective teacher was one who pays attention to the things students are struggling with and/or the things in which they are able to succeed. Following is a quote from one of the participants:

> "I think that definitively paying attention to each student and noticing if they are having a rough day or they are struggling… like getting to know their strengths, their weaknesses." (P17).

Helping/Assisting Students

Another behavior of effective teachers that participants considered as important was helping/assisting students. Some participants shared the belief that an effective teacher is someone who helps students with their learning by providing one-on-one feedback/assistance, supervising their work during activities, and/or attending to their questions. For example, one participant discussed the importance of helping students as a key aspect of effective teachers, stating,

> "The teacher should be willing to help you learn, and not to constrain in your learning. They are going around helping everybody, like one by one, like they are getting to them. An effective teacher is the first who says, 'hey, could you come back after class, or can you come by the lunch hour'." (P04).

Challenging Students

Participants also discussed that another common behavior of effective teachers is challenging students. These participants shared the belief that an effective teacher is someone who challenges or "pushes" students with activities or content that is above what they can understand or do, or that it is beyond the standards. For example, one

preservice teacher discussed the importance of challenging students with material that is beyond the standards, stating,

> "You have to want to challenge the kids as well, and I mean that is important, not just saying this is the standard and I have to met that standard with all the kids, but instead I want to go beyond and teach them as much as they can." (P08).

Another participant highlighted the need for teachers to challenge students by presenting them with things that they might not be able to do, but without making them feel uncomfortable or unsure.

> "You want to push your students, not to make them uncomfortable and not to make them unsure, but you want to present them with things that they couldn't do maybe necessarily." (P09).

Instruction-Related Behaviors

This category comprises participants' beliefs about the behaviors of effective teachers associated to instruction. There were four shared beliefs that emerged from participants' responses regarding this category: Adjusting/modifying instruction, making instruction fun/exciting, going beyond content-based instruction, and planning instruction. Table 11 provides a quantitative description of the findings for this category.

Adjusting/Modifying Instruction

Participants shared the belief that an effective teacher is one who teaches/presents information in multiple ways, or modifies lesson plans depending on unexpected circumstances that might emerge during the instruction (e.g., student questions/answers,

unplanned transitions, students' understanding). For example, one participant commented,

> "Modify and adapt a lesson plan, because it is not always going go as you planned it on paper, students will come up with answers that you don't expect, and then they may also don't understand a lesson that you think is going to be great, and you may have to adapt and go back and reteach." (P14).

Table 11: Frequency of Themes and Codes related to the Teacher's Instruction-Related Behaviors

Theme	Freq.	Code	Freq.
Adjusting/ Modifying Instruction	7	An effective teacher adjusts/modifies instruction or teaches in different/multiple ways.	7
Making Instruction Fun/ Exciting	6	An effective teacher makes instruction fun/exciting for students (e.g., varying activities, putting humor).	6
Going Beyond Content-Based Instruction	3	An effective teacher helps students becoming life-long/independent learners and/or rounded individuals.	3
Planning Instruction	3	An effective teacher is constantly thinking and working towards designing instruction or how to teach students.	3

Other participants discussed the importance of presenting information in multiple/ different ways so the teacher can reach all students. For example, two participants stated,

> "Not just explaining the content, but being willing to explain it multiple ways, because like I said before, not all the students are going to learn the same way." (P12).

> "I think that they [effective teachers] present information in an interesting way, like they don't necessarily stand up and lecture. I think if you present the material in different ways you can reach all different students." (P16).

Making Instruction Fun/Exciting

Another belief shared among participants that was related to instruction-related behaviors of effective teachers was making instruction fun/exciting. A number of participants suggested that an effective teacher makes the instruction fun/exciting for students by varying activities or incorporating humor, which could in turn have a positive effect on students' learning and motivation. One participant stated the following:

> "I would say that an effective teacher creates instruction that has a lot of variety to it and like makes it feel like you are just having fun. I like if people are having fun, like it isn't force upon you… When you are like laughing and having fun and doing things that are interesting, you want to pay attention more to what's going on and… really enjoying what you are learning." (P01).

Similarly, another preservice teacher pointed out the importance of integrating humor into the classroom and its impact on students learning.

> "Always try like incorporate humor, because students are… they want to laugh, they want to have fun, they want to have a good time… If it is fun then they are going to suck it in more." (P14).

Going Beyond Content-Based Instruction

Some participants also discussed that an effective teacher is someone who does not only teach or lecture students about a particular content, but also helps them becoming life-long, independent learners and/or rounded individuals. For example, one

participant highlighted the need for teachers to focus on teaching students about personal and social matters rather than just about content knowledge, stating,

> "I think the teacher needs to be, like teaching the child as a whole... you need to also focus on their full education, not just their academics... like how to be a person and how to be a good citizen." (P23).

Planning Instruction

Another common belief among some participants was that effective teachers usually invest a considerable amount time in planning instruction. Specifically, participants discussed that an effective teacher is constantly thinking and working towards designing instruction or how to teach students. One of these participants commented the following:

> "You need to have some amount of time invested in the planning, so you can't just show and do like, 'hey kids, we are going to learn today', and not really know what you are doing. So you need to take time to think it through." (P03).

Control-Related Behaviors

A third category that emerged from the data regarding participants' beliefs about the behaviors of effective teachers was about teacher control-related behaviors in the classroom. This category encompasses participants' beliefs about three types of behaviors: Classroom management behaviors, personal control behaviors, and modeling appropriate behaviors. Table 12 provides a quantitative description of the findings for this category, in terms of the frequency of themes and codes across the data.

Table 12: Frequency of Themes and Codes related to the Teacher's Control-Related Behaviors

Theme	Freq.	Code	Freq.
Classroom Management Behaviors	8	An effective teacher keeps things in control in the classroom/has good classroom management skills.	4
		An effective teacher makes sure students are on task/following rules.	2
		An effective teacher manages instructional time efficiently/maximize instructional time.	2
Personal Control Behaviors	7	An effective teacher is always calm, talks to students in a clam, quiet way, and never loses her/his temper or composure in front of the students.	7
Modeling Appropriate Behaviors	3	An effective teachers models what she/he expects students to do in the classroom.	3

Classroom Management Behaviors

The most recurrent type of control-related behaviors cited by participants was classroom management behaviors. Participants indicated that an effective teacher was someone who kept things in control in the classroom and had good classroom management skills. For example, one participant commented,

> "They [effective teachers] can control the class, like just classroom management skills." (P11).

Another participant highlighted the need for teachers to have good classroom management and to control the behavior of students in the classroom, stating,

> "They [effective teachers] have good classroom management... they are able to direct the flow in the classroom, and it is like students being disruptive, like know what to do with the students." (P02).

Some participants also discussed that an effective teacher was someone who makes sure students are on task and/or following rules in the classroom. For example, one participant commented,

> "I think it is their [effective teachers] job is to make sure that everyone is following the rules… it is kind of chaotic if they let the students do whatever they want. I think they [effective teachers] are kind of flowing around to make sure people are on task." (P22).

Participants also noted that effective teachers are those who efficiently manage or maximize instructional time. One of the participants commented the following based on a reflection she made of a previous experience with an effective teacher:

> "She [effective teacher] would just do all the stuff at once, like in 10 minutes... they [students] like learn a lot in a small amount of time, so like she is really maximizing her instructional time... that's part of management, it is like how much time you take for the activities." (P02).

Personal Control Behaviors

Participants also discussed that an effective teacher also has to exhibit personal control behaviors. Specifically, these participants shared the belief that an effective teacher was always calm, talked to students in a calm, quiet way, and never lost her/his temper or composure in front of the students. In other words, an effective teacher had to be always in control her/himself as highlighted by the following quotes:

> "I would say, calm, because if they [students] think you are feeling out of control then they are going to think, 'what's going on?'… I just think it is important for them [effective teachers] to be calm, and I feel that the behavior of he teacher should just be that, things are in control." (P11).

> "Always maintaining control... It can be difficult in your classroom if your students aren't having a good day, if they are all not willing to learn… you know you are the teacher, you need to maintain composure, and that can be very difficult, mm… just maintaining that composure." (P12).

Modeling Appropriate Behaviors

Finally, some participants commented that a common behavior found in effective teachers was modeling appropriate behaviors for the students in the classroom. For example, one preservice teacher pointed out that the teacher should behave in ways she/he wants students to behave, stating,

> "Modeling what she wants the students to do, like you can't... if you are teaching about something you should be modeling always, because your actions speak a lot more than your words." (P10).

Variations in Participants' Beliefs across Teacher Education

This section contains an exploratory analysis of potential variations in participants' beliefs about effective classroom instruction and the characteristics and behaviors of effective teachers, according to their points of enrollment in the teacher preparation program (i.e., first year, second-third year, students teaching).

Since the nature of this analysis is purely exploratory, the findings included in this section should be taken with caution. Even though some of the variations in beliefs found among the three groups of participants might appear somewhat obvious, there were important methodological limitations that prevent any conclusive interpretations. The cross-sectional nature of the data collection and analysis does not allow the exploration of changes in participants' beliefs over time. In this sense, variables that might be associated

to potential variations in participants' beliefs across teacher education were not considered, making it difficult to determine whether participants' beliefs could actually remain stable or change as they transit teacher education. In other words, differences in participants' beliefs across groups might be due simply to chance. A longitudinal study conducted over the complete course of different teacher preparation programs might be needed in order to overcome this limitation.

Furthermore, although the data collected from student teachers allowed the identification of some recurrent themes within this group, the reduced number participants from whom data was collected (N=4) made it difficult to determine whether those themes accurately characterize student teachers' beliefs, thus diminishing the credibility of any comparisons involving this particular group. Because student teachers were placed in schools far from the research site and they usually had a larger workload than students in the other two groups, they may have decided not to participate in the study.

Considering these methodological limitations, the purpose of this section is merely to provide a glimpse of potential differences in participants' beliefs about teacher effectiveness across groups.

Beliefs About an Effective Classroom Instruction

Frequency comparisons of categories and themes across the three groups indicated potential variations in participants' beliefs about an effective classroom instruction. Table 13 provides a quantitative description of those variations in terms of the frequency of themes across the three groups.

Table 13: Frequency of Themes Related to Effective Classroom Instruction across Group Data

Category	Theme	*Freq.* First Year Students (N=9)	*Freq.* Second-Third Year Students (N=11)	*Freq.* Student Teachers (N=4)
Types of Pedagogical Approaches	Collaborative/ Group-Learning Instruction	1	10	0
	Discussion/Inquiry-Based Instruction	0	5	2
	Differentiated Instruction	0	4	2
The Physical Environment of the Classroom	Organization of the classroom (Physical Elements)	5	7	0
	Organization of the classroom (Stations, Centers)	1	5	1
The Role of the Teacher During Instruction	Facilitating/Guiding	2	6	3
	Providing Structure	2	8	1

Type of Pedagogical Approach

The results of the exploratory analysis suggested that most participants in the second-third year group and most participants in the student teaching group shared the belief that the type of pedagogical approach used in the classroom is an important aspect

of effective classroom instruction. However, this was not the case for most of the participants in the first year group. A closer analysis of the data suggested that majority of preservice teachers in the second-third year group consider that collaborative/group-learning instruction was an important pedagogical approach. They shared the belief that allowing students to work in groups and/or collaborate with their peers was distinctive of effective classroom instruction, as highlighted in the following comment from one of the participants in this group.

> "Collaborating with their peers is more ideal than like do everything by yourself… they [students] can talk to each other, you know, even if it is something as simple as doing a math problem, you know… they have their strategy that they use, but they can also learn from the person that is sitting next to them, so is kind of working together." (S08).

In addition, only participants in the second-third year group and the student teaching group consider discussion/inquiry-based instruction as another key pedagogical approach. They discussed that in an effective instruction there should be space for students to explore, experiment, or discuss things on their own. For example, one participant in the student teaching group highlighted the importance of conducting experiments for students' learning, stating,

> "Experimentation is a very good way to learn either the good way to do something or, if you fail, like if your experiment doesn't go well, you can talk about how it didn't work well, what you think you would have done next time, things like that, any way you learn better (...) if you actually do the experimentation and everything, then they get to learn more and they will understand it better, because they are actually doing the stuff, and that's the same with any subject." (T02).

Furthermore, only participants in the second-third year and student teaching groups highlighted the importance of differentiated instruction. They shared the belief that effective instruction varies depending on what students bring to the classroom (e.g.,

background, knowledge, skills), as well as on their educational needs. For example, one participant in the second-third year group commented,

> "I don't think there is one type of classroom that will benefit all students… I think that differentiation is the term that I should use, you know. So for instance, if you have a classroom and the students have a lot of background and family influence in education, so for instance if the parents read a lot to them and things like that, then you probably set up more independent reading centers, but if you have a classroom where the students, mm… don't really have emphasis at home in education and then they probably don't have as much independent reading." (S02).

The Physical Environment of The Classroom

Preservice teachers in the first year and second-third year groups considered the physical environment of the classroom as an important aspect of effective instruction. A closer look at the data suggests that only participants these two groups shared the belief that a central aspect of effective instruction is the organization of the classroom in terms of how the physical elements in the classroom (e.g., desk, tables, areas) are arranged. For example, one participant in the first year group stated,

> Definitively organized, things need to be organized in my classroom. I like all of the desk clomp together, all facing the front too, because sometimes they do like a clomp of four and they are facing each other, then you have kids that are not paying attention. When they [students] are all facing the front all organized I feel that is just going to run better… How the classroom is set up is going to affect the kids and how they want to learn." (F06).

Additionally, around half of preservice teachers in the second-third year group shared the belief that an effective instruction is characterized by the organization of the classroom, but in terms of the presence of different stations/centers where students can do different activities, whereas only one participant in the first year group and another

participant in the student teaching group shared this belief. The following comment from one of the participants in the second-third year group exemplifies this belief.

> "There would be places for them [students], like in the classroom, where they can go read, or different centers, like reading centers or different places where they can go and work as groups or do different things." (S05).

The Role of the Teacher During Instruction

The results of the exploratory analysis also suggested that majority of participants in the second-third year and student teaching groups considered that an important component of effective classroom instruction was the role of the teacher. More specifically, preservice teachers in these two groups considered facilitating/guiding as an important role of the teacher during instruction. In this sense, they shared the belief that the teacher's role is to facilitate students' learning while providing them with control over their own learning/education. Only a few participants in the first year group seemed to share this belief. For example, one participant in the student teaching group highlighted the importance of facilitating students' active role in their own education, stating,

> "The teacher should be also a facilitator, in that, like on the first day you facilitate the students coming up with their own rules, first you tell them when you want them to go, but you want the kids to come up with those a little bit and take more a role in their education." (T04).

The analysis also suggested that majority of participants in the second-third year group considered providing structure as a key role of the teacher during instruction. These preservice teachers shared the belief that the teacher should provide students with directions, rules, expectations, and/or goals to follow during instruction. Only few participants in the first year and student teaching groups discussed this idea. The

following comment from one participant in the second-third year group highlights the importance of providing students with rules.

> "…Like a list of the rules, the classroom rules, that kind of thing, that's is important so they [students] can see, they can like, "oh what am I doing wrong? Am I doing what I am supposed to be doing?" A list of rules and everything should runs smoothly." (S09).

Beliefs about the Characteristics of Effective Teachers

Frequency comparisons of categories and themes across the three groups also indicated some potential variations in participants' beliefs about the characteristics of effective teachers. Table 14 provides a quantitative description of those variations in terms of the frequency of themes across the three groups.

Teacher Persona

The analysis of the data revealed that preservice teachers in the first year and second-third year groups considered teacher persona as an important characteristic of effective teachers (i.e., how teachers approach others at a personal level and its implications for students' growth and academic achievement). Specifically, around half of participants in these two groups shared the belief that an effective teacher is someone who is friendly/welcoming. In this sense, an effective teacher was considered as a friendly, approachable person who is willing to listen and talk to students about their academic or personal concerns. For example, one participant in the second-third year group commented,

> "One of the big things is being there for your students and having your students know that they can come and talk to you, not only if they have a

> question in the classroom, but just about anything in their lives… like you can approach him [the teacher] with any question and he is willing to talk to you about it. It can be related about something really random and he is willing to talk to you." (S02).

Table 14: Frequency of Themes Related to the Characteristics Effective Teachers across Group Data

Category	Theme	*Freq.* First Year Students (N=9)	*Freq.* Second-Third Year Students (N=11)	*Freq.* Student Teachers (N=4)
Teacher Persona	Friendly/Welcoming	6	5	0
	Caring/Nurturing	5	5	1

In addition, a similar number of participants in the first year and second-third year groups also considered caring/nurturing as an important characteristic of effective teachers, whereas only one participant in the student teaching group discussed about this idea. Specifically, these preservice teachers shared the belief that an effective teacher cares or "wants to be there" for the students and is concerned about her/his students' personal life and not only about their academics. For example, one participant in the first year group highlighted the importance of being caring, stating,

> "Someone who is caring... because if you don't feel like someone cares about what you have to say, you are not going to say anything, because they are just going to shut you off and not listen to any of your ideas or anything like that, so you need to show them [students] that you are not only caring about their education but like about them as a person. So caring will be like the number one." (F01).

Beliefs about the Behaviors of Effective Teachers

Frequency comparisons of categories and themes across the three groups also indicated some potential variations in participants' beliefs about the behaviors of effective teachers. Table 15 provides a quantitative description of those variations in terms of the frequency of themes across the three groups.

Table 15: Frequency of Themes Related to the Behaviors of Effective Teachers across Group Data

Category	Theme	*Freq.* First Year Students (N=9)	*Freq.* Second-Third Year Students (N=11)	*Freq.* Student Teachers (N=4)
Instruction-Related Behaviors	Adjusting/Modifying Instruction	1	5	1
	Making Instruction Fun/Exciting	5	1	0

Instruction-Related Behaviors

The comparative analysis showed variations in participants' beliefs about instruction-related behaviors of effective teachers across the three groups. Almost half of preservice teachers in the second-third year group and only one participant in the first year group saw adjusting/modify instruction as a distinctive behavior of effective teachers. In this sense, they shared the belief that an effective teacher is one who presents information in multiple ways, or modifies lesson plans depending on unexpected circumstances that might emerge during the instruction (e.g., student questions/answers,

unplanned transitions, students' understanding). For example, one participant in the second-third year group commented,

> "Modify and adapt a lesson plan, because it is not always going go as you planned it on paper, students will come up with answers that you don't expect, and then they may also don't understand a lesson that you think is going to be great, and you may have to adapt and go back and reteach." (S07).

On the other hand, more than half of preservice teachers in the first year group and only one participant in the second-third year group considered that making instruction fun/exciting was a typical behavior of effective teachers. These participants shared the belief that an effective teacher makes instruction fun/exciting for students by varying activities or incorporating humor. For example, one participant in the first year group pointed out the importance of making things fun in the classroom so students can pay more attention and enjoy learning, stating,

> "I would say that an effective teacher… like makes it feel like you are just having fun. I like if people are having fun, like it isn't force upon you. When you are like laughing and having fun and doing things that are interesting, you want to pay attention more to what's going on and really enjoying what you are learning." (F01).

CHAPTER 5. DISCUSSION

The purpose of this interpretative study was to better understand elementary preservice teachers' beliefs about effective classroom instruction and what they believed to be the behaviors and characteristics of effective teachers. Additionally, the researcher also explored how these beliefs may vary at different points during a teacher education program (i.e., first-year students, second- and third-year students, and student teachers). This chapter presents a discussion on four main points: a) interpretation of findings, which includes a discussion on the findings in the context of existing literature and the theoretical framework chosen for the study; b) relevance of the findings for theory and practice, which refers to the implications of the findings for researchers and teacher educators; b) challenges and limitations of the study; and d) recommendations for future research.

Interpretation of Findings

The interpretation of the findings is divided into five subsections: a) beliefs about effective classroom instruction; b) beliefs about the characteristics of effective teachers; c) beliefs about the behaviors of effective teachers; d) variations in beliefs across teacher education; and e) lessons learned from the data.

Beliefs about Effective Classroom Instruction

Participants' beliefs about effective classroom instruction dwell around five overreaching categories: The physical environment of the classroom, the psychological/social environment of the classroom, the role of the teacher during instruction, the role of students during instruction, and types of pedagogical approaches. Table 16 provides a quick view of the overreaching categories and themes about effective classroom instruction that emerged from the data.

Table 16: Categories and Themes about Effective Classroom Instruction

Categories (5)	Themes (21)
The Physical Environment of the Classroom	Organization of the classroom Availability of resources/supplies Size Classroom's Appearance
The Psychological/Social Environment of the Classroom	Feeling comfortable Openness Sense of community Diversity Respect
The Role of the Teacher During Instruction	Facilitating/guiding Providing structure Establishing relationships Maintaining control/discipline Making learning interesting, exciting, fun
The Role of Students During Instruction	Disposition to learn Passive participant Active participant Responsible learner
Types of Pedagogical Approaches	Collaborative/group-learning instruction Discussion/inquiry-based instruction Differentiated instruction

Most of the topics participants discussed when they were asked about effective classroom instruction relate to how the physical environment of the classroom influences students' learning and motivation. They believed, for example, that the way in which physical objects are arranged in the classroom (e.g., desks, tables, boards) and the distribution of areas, stations, or centers in the classroom have important implications for keeping students on task and paying attention. Similarly, they also noted that the size of the classroom and the number of students in it could facilitate a positive interaction between the teacher and the students. In addition, majority of participants believed that having enough resources or supplies in the classroom (e.g., books, materials, manipulatives, technology, financial resources to buy supplies), as well as the visual outlook of the classroom (e.g., colorful, having things on the walls, posters), could positively influence students' motivation.

Somewhat contrary to participants' beliefs, research on teacher effectiveness has indicated that instructional conditions in the classroom (e.g., type of instruction, quantity and phasing of instruction) could have a greater contribution in fostering students' growth and achievement than physical environmental conditions (Brophy, 1979/2010; Brophy & Good, 1986; Rosenshine, 1983). This is not to say, however, that the physical environment of the classroom does not contribute to students' achievement and motivation. Other research suggests that the physical space in which students expend their time at schools does impact their learning (Culp, 2005; Earthman, 2004; Higgins, Hall, Wall, Woolner, & McCaughey, 2005; Weinstein, 1979). For example, similar to participants' belief regarding the organization of the classroom, Higgins et al. (2005) concluded that the "less attentive and less successful pupils are particularly affected by

the desk arrangement, with their on-task behavior increasing very significantly when seated in rows instead of tables." (p. 26). Furthermore, Stronge, Tucker and Hindman (2004) also suggested that effective teachers "strategically place furniture, learning centers, and materials in order to optimize student learning and reduce distractions." (p. 65). Similarly, Culp (2005) argue that using visual displays in the classroom could provide students with cues about how to succeed in different tasks, and thus could be a great tool to motivate students to learn.

Even though research has suggested that environmental conditions do not play as significant of a role as instructional conditions (Brophy & Good, 1986), they can contribute to students' achievement and motivation. Thus, the fact that majority of elementary preservice teachers in the sample were inclined to believe that environmental conditions are the most important aspect of effective classroom instruction might suggest that they do not hold "simplistic" or "naïve" beliefs, as others have suggested (Clark, 1988; Conner et al., 2011; Lasley, 1980; Pajares, 1992; Stuart & Thurlow, 2000).

Participants also pointed that the classroom psychological/social environment could influence students' learning and motivation. They discussed the need for students to feel comfortable or safe while being around others, sharing their ideas/perspectives, participating, or making mistakes in order to be motivated to learn. They also noted that a key aspect of effective instruction was openness in a classroom that was receptive to new ideas, backgrounds and/or experiences. These particular beliefs somehow echoed what research on teacher effectiveness has suggested regarding the implications of instructional conditions on students' learning (Brophy & Good, 1986). For example, some studies have shown that a task oriented but relaxed classroom environment, as well

as a positive classroom climate where students are allow to participate, could have a significant effect on students' achievement (Kyriakides, 2005; Rosenshine, 1976; Stronge, 2007; Stronge et al., 2011).

According to Bryk and Raudenbush (2002), students' achievement does not only depend on their own personal attributes, but also on the characteristics of other students in the classroom. In this sense, students' learning could be enhanced by the presence of other students in the classroom having different backgrounds (Newton et al., 2010). Similarly, participants also discussed about the importance of having a diverse group of students in the classroom. For example, some preservice teachers believed that having an environment in the classroom that allowed students to feel being part of a community and share with other students from different cultural, economical, and/or social backgrounds could allow them to have contact with ideas different from their own, and this in turn would be beneficial for developing tolerance and learning from others.

It is important to note that even though the physical environment and the psychological/social environment were the most salient categories regarding effective classroom instruction, literature review revealed one other study where participants discussed these two aspects of effective instruction (Murphy et al., 2004). This could be due to the fact that most of the research done in this area has been disconnected from researcher on teacher effectiveness (Witcher et al., 2008), and has been mainly focused on preservice teachers' beliefs about the characteristics of effective teachers.

A third major category that emerged from the data was the role of the teacher during instruction. Participants noted that one of the roles of the teacher is to be a facilitator/guide. In this sense, some of them considered that the role of the teacher should

be to facilitate students' learning by allowing them to have some control over their own learning. At the same time, participants also discussed that the role of the teacher should be to provide knowledge and make sure students have access to and retain the information. These two views of the teacher as a facilitator seem to resonate, respectively, with two common views about teaching: constructivist and traditional. According to Khalid and Azeem (2012), in a constructivist teaching approach the teacher's role is interactive and involves helping students construct their own knowledge, whereas in a traditional teaching approach the teacher's role is directive and consists mainly in providing students with information.

In this sense, preservice teachers' beliefs about the role of the teacher could be related to other beliefs they have about effective instruction (i.e., teaching approaches). However, participants only made reference to constructivist pedagogical approaches as part of an effective classroom instruction (e.g., discussion/inquiry-based instruction, collaborative/group-learning instruction). One plausible explanation for the dichotomous beliefs could be that preservice teachers' beliefs about some aspects of effective teaching are independent of beliefs they have about other aspects effective teaching. This idea draws from a common assumption found in most representationalist views about the nature of belief. According to Schwitzgebel (2011), most representationalists hold an atomistic view of individuals' beliefs; that is, they assume that the content of a belief does not depend on the content of other beliefs. Similarly, other research programs (i.e., students' epistemological beliefs) have suggested that individuals' beliefs could be considered as a system of more-or-less independent beliefs that do not necessarily develop in synchrony and may not be related to one another (Schommer, 1990).

Preservice teachers also pointed that an important role of the teacher in an effective classroom instruction was to provide structure. According to Brophy (1979/2010) and Kyrikiades (2005), how the teacher manages the classroom (e.g., structuring instruction, following specific goals, maintaining discipline in the classroom) has been consistently found to impact students achievement and motivation. Similarly, participants believed that the role of the teacher was to provide students with directions, rules, and/or goals to follow, as well as to maintain control/discipline during instruction so students can concentrate on learning. These particular finding seems to concur with those of Witcher and Onwuegbuzie (1999) and Ng et al. (2010). In their studies, preservice teachers also considered that one of the main roles of the teacher was to be in control students or managing students' behaviors.

Additionally, participants also discussed that the role of the teacher should be that of establishing good relationships with students and showing interest in their personal lives, which would allow him/her to make the material more relatable to students' lives and make them more willing to come to class, participate, and learn. Previous studies have found this belief to be very common among preservice teachers (Murphy et al., 2004; Walls et al., 2002; Weinstein, 1989). For example, Walls et al. (2002) found that a good relationship between the teacher and the students was the most predominant belief among preservice teachers. Similarly, Weinstein (1989) concluded that preservice teachers put more weight on interpersonal variables of the teacher (i.e., ability to relate to students) than on variables related to pedagogical aspects of teaching.

Although participants in the current study did not consider establishing relationships as the most important role of the teacher, the findings suggest that their

beliefs about the role of the teacher may coincide with findings from actual research on teacher effectiveness. Specifically, previous research has further suggested that establishing good relationships with students could influence their levels of achievement, motivation, and attention in the classroom (Harris, 1998; Murray, 2002; Pianta, 1999).

Preservice teachers also considered that students play important roles in the classroom. For example, some of them noted that the primary role of students during instruction should be that of absorbing/receiving information/knowledge and paying attention to what the teacher is saying; whereas other participants argued that, instead of only listening to the teacher, students should be actively participating in the classroom and be open to and engage in activities (e.g., discussion). These two views of the role of the student as an active or passive participant might be echoing what researchers have denominated as deep and surface approaches to learning, respectively (Entwistle, 1988; Marton & Säljö, 1979; Prosser & Trigwell, 1999).

According to Marton and Säljö (1979), a deep learning approach involves the active participation of students in discussing new ideas and using them to solve problems in real-life contexts. On the other hand, a surface approach to learning involves the mere acceptance of the information presented by the teacher and memorization of isolated and unrelated facts. This again raises the question of whether elementary preservice teachers' beliefs about aspects of effective instruction could be understood from an atomistic perspective (Schwitzgebel, 2011). Assuming that a passive view of the student would fit better with a traditional view of instruction, it is not clear why some participants made reference to the role of students as passive participants, but none of them discussed traditional pedagogical approaches as part of effective instruction during the interview.

As mentioned before, preservice teachers also discussed about the types of pedagogical approaches that are typically used in effective instruction. In general, participants believed that collaborative/group-learning instruction, discussion/inquiry-based instruction, and differentiated instruction could positively impact students learning and motivation. This, however, does not seem to correspond with what researchers have found regarding effective instruction. Researchers have suggested that the use of structured curriculum and direct, step-wise and whole-class instruction might be an effective instructional method in relation to students' achievement (Brophy, 1979/2010; Harris, 1998; Rosenshine, 1976, 1983). At the same time, other scholars have suggested that direct instruction alone might not be the best pedagogical approach (e.g., Good, 1979; Kyriakides, 2005; Stronge 2007). The lack of consensus around the effectiveness of this pedagogical approach calls into question whether preservice teachers' beliefs about effective instruction may concur or not with actual research on teacher effectiveness.

Beliefs about the Characteristics of Effective Teachers

The analysis of the data suggested that participants' beliefs about the characteristics of effective teachers dwell around four overreaching categories: Teacher persona, teacher motivation, teacher control, and teacher change. Table 17 provides a quick view of the overreaching categories and themes about the characteristics of effective teachers that emerged from the data.

In relation to teacher persona, preservice teachers pointed that an effective teacher is a person who is friendly, caring, and/or accepting. In this sense, they believed that the

teacher should be always concerned and willing to talk with students about academic matters as well as their personal lives; someone who cares or "wants to be there" for the students and is open to their ideas. These results clearly concur with those found in most previous studies on preservice teachers' beliefs about teacher effectiveness (Minor et al., 2002; Murphy et al., 2004; Ng et al., 2010; Walls et al., 2002; Weinstein, 1989, 1990; Witcher & Onwuegbuzie, 1999). Researchers have consistently found that preservice teachers tend to consider teacher persona as the most salient characteristic of effective teachers.

Table 17: Categories and Themes about the Characteristics of Effective Teachers

Categories (4)	Themes (12)
Teacher Persona	Friendly/welcoming Caring/nurturing Open/Accepting
Teacher Motivation	Excited Passionate Positive Fun/humorous
Teacher Change	Willingness to learn/improve Flexible Creative
Teacher Control	Organized Patient

For example, analogous to the results found in the current study, Murphy and colleagues suggested that most preservice teachers tended to believe that being caring and having strong affective skills are some of the most important characteristics of effective teachers (Murphy et al., 2004). Weinstein (1989) similarly concluded that being friendly,

caring, and open were some of the most predominant beliefs of preservice teachers regarding the characteristics of effective teachers.

Teacher motivation was another category that emerged from the data regarding the personal attributes of effective teachers. Similar to the findings of Witcher and Onwuegbuzie (1999), participants discussed that an effective teacher is someone who is excited and passionate about teaching and learning and "wants to be there" for her/his students, which in turn could make students be more motivated to learn. Another personal attribute that participants considered as typical of effective teachers was being fun/humorous. They believed that an effective teacher is someone who has a good sense of humor, can make jokes, and is willing to incorporate that into the classroom. This particular belief is somewhat similar to one found by Murphy and colleagues in their study. They reported that preservice teachers considered “not boring” as an important characteristic of effective teachers (Murphy et al., 2004).

In terms of teacher change, participants also discussed the importance of being willing to constantly improve and learn. In this sense, an effective teacher was someone who considers her/himself as a learner and is willing to continuously grow and improve on her/his skills and knowledge. This belief echoes the idea of the teacher as a lifelong learner. According Porter and Brophy (1988), effective teachers are always thoughtful and reflective about what they do in the classroom. Korthagen, Loughran, and Lunenberg (2005) further argued that teachers need to be constantly reflecting upon their knowledge and practice, and this has become one of the central principles of many teacher education programs (i.e., reflective practice). Thus, it is possible that preservice teachers constructed this particular belief based on their experiences in the teacher education

program. This could lead to the question of whether preservice teachers' beliefs about teaching are mainly developed during the time of their early experiences as students in the school years (Calderhead & Robson, 1991; Lortie, 1975) and tend to persist during teacher preparation (Florio-Ruane & Lensmire, 1990; Nespor, 1987; Pajares & Bengston, 1995; Zeichner, 1986), or whether preservice teachers continuously construct and/or refine their beliefs about teaching as they are exposed to new educational experiences.

According to Joyce and Hodges (1981), flexibility is a key aspect of effective teaching. In this sense, an effective teacher is one who can incorporate a variety of teaching strategies in designing and developing her/his instruction, and can also adapt to new or unexpected dynamics that may take place in the classroom. Similarly, participants also considered that being flexible was a typical characteristic of effective teachers. They noted that an effective teacher is someone who can change her/his plans when something does not go as planned and is able to arrange instruction in creative ways, which in turn could have implications for students' motivation.

Finally, preservice teachers also considered personal attributes of an effective teacher that are related to internal and external control, and the implications that these attributes may have for student growth and academic achievement. In this regard, participants shared the belief that an effective teacher is a person who is highly organized, meaning that he/she always knows where things are, is well prepared for instruction, and/or makes plans ahead of time (i.e., external control). Furthermore, they discussed that an important personal attribute of an effective teacher is to be patient, meaning that she/he is always in control of her/himself and tries to avoid feeling frustration when working with students (i.e., internal control).

Preservice teachers in Ng et al. (2010)'s study also considered personal attributes related to internal and external control as common of effective teachers. Ng and colleagues found that preservice teachers at the beginning of a teacher education program believed that an effective teacher is one who is in control of her/his students and the classroom, whereas preservice teachers at the end of the program considered that effective teachers are those who prevent loss of personal control. These results reverberate with those found by Hativa, Barak, and Simhi (2001) in a study of exemplary teachers' beliefs about effective teaching. They concluded that most exemplary teachers considered being organized as important for effective teaching. Thus, preservice teachers may hold beliefs about teacher effectiveness that are similar to those held by effective teachers, which raises the question of whether preservice teachers' beliefs should be considered naïve.

Teacher personal qualities or attributes have been found to be an important dimension of teacher effectiveness (Anderson, 2004; Stronge, 2007; Stronge et al., 2011). For example, Anderson (2004) suggested that even though teacher's personal traits and characteristics per se do not directly influence how effective a teacher would be (or how well students would learn), they could mediate or moderate teachers' behaviors in the classroom (e.g., providing feedback, maintaining discipline). Despite the fact preservice teachers could hold various beliefs about which characteristics of effective teachers are more important than others, it is not clear, however, what they believe would be the nature of the relationship between those characteristics and effective teachers' behavior. Although most participants argued that teachers' characteristics somehow could impact students' learning and motivation, none of them explicitly considered them related to

teachers' behavior. This could also lead us to questioning whether preservice teachers could hold more-or-less independent beliefs about different aspects of teacher effectiveness, or if their beliefs may be interrelated.

Beliefs about the Behaviors of Effective Teachers

Participants also discussed about the behaviors of effective teachers. According to Good et al. (1975), effective teachers' behaviors are specific actions that they exhibit in the classroom and which can directly or indirectly contribute to student growth and academic achievement. The analysis of the data suggests that preservice teachers' beliefs about the behaviors of effective teachers dwell around three overreaching categories: Student-related behaviors, instruction-related behaviors, and control-related behaviors. Table 18 provides a quick view of the overreaching categories and themes found from the analysis of the data.

Table 18: Categories and Themes about the Behaviors of Effective Teachers

Categories (3)	Themes (10)
Student-related behaviors	Knowing/understanding students Helping/assisting students Challenging students
Instruction-related behaviors	Adjusting/modifying instruction Making instruction fun/exciting Going beyond content-based instruction Planning instruction
Control-related behaviors	Classroom management behaviors Personal control behaviors Modeling appropriate behaviors

According to Harris (1998), effective teachers have been found to be those who get to know their students' interests and needs and are able to adapt their instruction using that information. Similarly, preservice teachers considered that effective teachers are those who constantly reflect about their students and take time to get to know them on a personal level (e.g., learning their names, personal interests and background), which allow them to organize their instruction in a way that is sensitive to the students' context and take into account their weaknesses and strengths.

Additionally, preservice teachers also believed that an effective teacher is someone who helps students with their learning by providing one-on-one feedback, supervising their work during activities, and/or attending to their questions. Previous research has found different results (Murphy et al., 2004; Woolfolk-Hoy & Murphy, 2001). For example, Murphy and colleagues concluded that in terms of teacher behaviors/actions, majority of preservice teachers believed that effective teachers spend a great deal of time managing their classrooms. In fact, only 6% of the preservice teacher who participated in their study considered helping or assisting students as a typical behavior of an effective teacher.

Another category that emerged from the data was participants' beliefs about the behaviors of effective teachers connected to instruction. In this regard, preservice teachers shared the belief that an effective teacher is one who teaches/presents information in multiple ways, or modifies lesson plans depending on unexpected circumstances that might emerge during instruction (e.g., student questions/answers, unplanned transitions, students' understanding). This takes us back to the concept of flexibility mentioned before, which refers to the inclusion of different teaching strategies

during instruction and adapting them according to different situations that may appear in the classroom (Joyce & Hodges, 1981). It seems then, that just as preservice teachers considered being flexible as a key characteristic of effective teachers, they also believed that effective teachers' behaviors should reflect flexibility.

This sort of correspondence between participants' beliefs about the characteristics and the behaviors of effective teachers is also evident when they referred to effective teachers as someone who makes instruction fun/exciting for students by incorporating humor in her/his activities. As discussed before, participants also noted that one key characteristic of effective teachers was to be a fun/humorous person. Thus, it may be that in some cases preservice teachers' beliefs about the characteristics and the behaviors of effective teachers are not independent and could be related to one another. If that is the case, as discussed previously, then participants did not seem to be aware of the nature of that relationship (e.g., mediation, moderation, causation).

A third major category that emerged from the data regarding participants' beliefs about the behaviors of effective teachers was teacher control-related behaviors. Going back to the discussion regarding participants' beliefs about effective classroom instruction and the characteristics of effective teachers, it seems that this is another case of correspondence between preservice teachers' beliefs about different aspects of teacher effectiveness. For example, in order for instruction to be effective, one of the roles that participants thought teachers should play was to maintain control/discipline during instruction so students can concentrate on learning. Similarly, one of the behaviors that some participants indicated as distinctive of effective teachers was to keep things in control in the classroom and to make sure students are on task and/or following rules.

Likewise, preservice teachers also noted that an effective teacher has to exhibit personal control behaviors. Specifically, participants shared the belief that an effective teacher is always calm, talks to students in a calm, quiet way, and never loses her/his temper or composure in front of the students, which somehow resembles participants' belief that an important characteristic of an effective teacher was to be patient and be always in control her/himself.

Variations of Beliefs Across Teacher Education

The researcher also conducted an exploratory analysis of potential variations in participants' beliefs about effective classroom instruction and the characteristics and behaviors of effective teachers, according to their points of enrollment in the teacher preparation program (i.e., first-year, second- and third-year, students teaching). As discussed in Chapter 4, the interpretation of these findings should be taken with caution. Methodological issues related the study's design (i.e., cross-sectional design) and data collection and analysis (i.e., data saturation) prevent any conclusive interpretations and only allowed the researcher to merely provide a glimpse of potential differences across groups. Table 19 provides a quick view of some potential variations across groups that emerged from the analysis of the data.

Most participants in the second- and third-year group and most participants in the student teaching group shared the belief that the type of pedagogical approach used in the classroom is an important aspect of effective classroom instruction. A closer analysis of the data suggested that majority of preservice teachers in the second- and third-year group considered collaborative/group-learning instruction as an important pedagogical

approach. In addition, only participants in the second- and third-year group and the student teaching group consider discussion/inquiry-based instruction and differentiated instruction as key pedagogical approaches for effective teaching.

Table 19: Variations in Participants' beliefs by Categories and Themes

Categories (5)	Themes (10)
Types of pedagogical approaches	Collaborative/group-learning instruction Discussion/inquiry-based instruction Differentiated instruction
The physical environment of the classroom	Organization of the classroom
The role of the teacher during instruction	Facilitating/guiding Providing structure
Teacher Persona	Friendly/welcoming Caring/nurturing
Instruction-related behaviors	Adjusting/modifying instruction Making instruction fun/exciting

One possible explanation for these differences could be related to the academic experiences participants were exposed to at the time of the study. As described in Chapter 3, second- and third-year students were assisting to methods courses at the time of the interview, and student teachers had already taken all of these courses (e.g., social studies in elementary education, literacy in the elementary and intermediate classroom). The fact that most participants in these two groups and almost none in the first-year group considered types of pedagogical approaches as an important aspect of effective instruction, raises the question of whether preservice teachers' beliefs are influenced or

not by the content they learn in college classrooms and tend to remain relatively stable during teacher preparation (Florio-Ruane & Lensmire, 1990; Nespor, 1987; Pajares & Bengston, 1995; Zeichner, 1986).

From a constructivist/interpretivist standpoint (Lincoln & Guba, 2013), it could be suggested that during methods courses preservice teachers in the second- and third-year group and the student teacher group could have incorporated new constructs into their existing beliefs, and thus may have refined some of their beliefs regarding which pedagogical approaches could be more effective that others. This echoes the idea that differences in preservice teachers' beliefs could be a result of different experiences in educational contexts (Stuart & Turlow, 2000).

Additionally, these findings differ from those found in previous studies (e.g., Murphy et al., 2004; Ng et al., 2010; Walls et al., 2002; Weinstein, 1989). For example, Weinstein (1989) and Murphy et al. (2004) concluded that even though there were some differences between preservice and inservice teachers' beliefs regarding the characteristics of effective teachers, both groups also tend to hold similar beliefs, suggesting that some of preservice teachers' beliefs about teacher effectiveness may not change as a result of training in teacher preparation programs, and hence may remain relatively unchanged by the time they finish college.

Participants in the second- and third-year group and the student teaching group noted that the role of the teacher was an important component of effective instruction. Preservice teachers in these two groups considered that the teacher should be in charge of the classroom and provide students with directions, rules, expectations, and/or goals to follow. Hence, it could be suggested that the experiences these preservice teachers had in

some methods courses (e.g., classroom management) could have leaded them to consider providing structure or being in charge of the classroom as a key aspects of effective instruction.

As discussed in Chapter 4, preservice teachers in the first-year and second- and third-year groups considered the physical environment of the classroom as an important aspect of effective instruction. A closer look at the data revealed that only participants in these two groups shared the belief that a central aspect of effective instruction was the organization of the classroom (i.e., how desk, tables, and areas in the classroom are arranged). In this sense, it could be conjectured that student teachers may have had some experiences during their practicum (e.g., attending to school norms and procedures, following state mandates, working with experienced teachers at the school) that encouraged them to disregard this as an important aspect of effective teaching.

Finally, participants in the first-year and second- and third-year groups also considered teacher persona as an essential characteristic of effective teachers. Specifically, they discussed that an effective teacher is someone who is either friendly/welcoming and/or caring/nurturing. Previous research suggested that both preservice and inservice teachers tend to consider teacher persona as one of the main characteristics of effective teachers (e.g., Murphy et al., 2004; Walls et al., 2002; Weinstein, 1989). Considering that student teachers are close in becoming inservice teachers, it could be interesting to explore why they did not consider this as an important characteristic of an effective teacher.

Lessons Learned from the Data

According to Lincoln and Guba (1985), interpretation in qualitative inquiry implies looking at the data as a whole by asking what "lessons" could we learn from it. This process encompasses a reflection on the findings in terms of its relevance for developing an understanding of the phenomenon investigated. At least five lessons could be learnt from the previous analysis of the findings.

Diversity of Meanings

One recurrent reflection that the researcher reported in his field notes was that elementary preservice teachers' beliefs about teacher effectiveness were more diverse than he initially suspected. He was expecting participants to share a narrower range of beliefs regarding an effective classroom instruction and the characteristics and behaviors of effective teachers; somewhat similar to what others researchers have found in previous studies. For example, as stated in Chapter 2, previous studies have shown that preservice teachers tend to believe that teacher persona (e.g., being caring, patient, enthusiastic, interactive with students, charismatic), as well as how they establish relationships with and control the behavior of students are the most common characteristics and behaviors of effective teachers (Minor et al., 2002; Ng et al., 2010; Walls et al., 2002; Weinstein, 1989; Witcher & Onwuegbuzie, 1999).

The results of the current study suggest, however, that elementary preservice teachers might consider other characteristics and behaviors as emblematic of effective teachers. For example, even though some of preservice teachers' beliefs about the characteristics of effective teachers found in previous studies were also shared by

participants in the current study (e.g., caring/nurturing, passionate, patient, friendly/welcoming), the findings suggest that preservice teachers could consider many other characteristics that should be deemed also as typical of effective teachers (e.g., being open/accepting of others ideas, positive, willing to improve/learn).

This indicates that the meanings embedded in elementary preservice teachers' beliefs about teacher effectiveness might be more varied than the literature has indicated. According to the framework developed for the present study, beliefs could be understood as mental constructions that depend on the subjective transaction between the individual and her/his prior knowledge and experiences. In this sense, a belief is considered a coherent and articulated set of constructs that make sense of some aspect of the individual's surroundings and makes possible the synthesis of personal experiences and their communication to others (Lincoln & Guba, 2013). Similarly, the literature on teachers' beliefs has suggested that preservice teachers begin construing their own beliefs about teaching during their early school years (Calderhead & Robson, 1991; Lortie, 1975; Pajares, 1992). Therefore, it could be plausible that the varied range of beliefs found among elementary preservice teachers is due to their exposure to a diverse array of educational-related experiences they had previous to teacher education. Future research should take a closer look at preservice teachers' prior experiences in shaping their beliefs.

The diversity of meanings found in participants' beliefs could also suggest that some of preservice teachers' beliefs about teacher effectiveness have been neglected in previous research (e.g., beliefs about the physical environment of classroom). Witcher et al. (2008) pointed that most of the research done on preservice teachers' beliefs about teacher effectiveness has been mainly focused on their beliefs about the characteristics of

effective teachers, and less on their beliefs about other aspects of teacher effectiveness. Therefore, it is crucial that future studies also focus on the beliefs preservice teachers hold about other topics related to teacher effectiveness (e.g., effective classroom instruction).

Their Beliefs Might Not Be That "Naïve"

Another lesson that could be learnt from the data is that some of elementary preservice teachers' beliefs might not hold as naïve beliefs as previous research have suggested (e.g., Clark, 1988; Conner et al., 2011; Florio-Ruane & Lensmire, 1990; Pajares, 1992; Stuart & Thurlow, 2000). For example, Pajares (1992) suggested that preservice teachers usually have "simplistic" beliefs about teaching and learning, and tend to consider that "the attributes more important to successful teaching are the ones they perceive as their own." (p. 323). Florio-Ruane & Lensmire (1990) further argued that preservice teachers' beliefs about the role of the teacher in most cases tend to be too "optimistic".

As showed above, the data suggested that some of elementary preservice teachers' beliefs seem to resonate with findings from research on teacher effectiveness (e.g., beliefs about the role of the physical and the psychological/social environment for effective instruction, beliefs about the role of the teacher during effective instruction, beliefs regarding teacher change and teacher student-related behaviors), as well as with the beliefs about effective teaching hold by exemplary teachers (e.g., Hative et al., 2001), such as beliefs about teacher control.

The discussion around this particular issue is not new in the psycho-educational literature. For example, research on students' beliefs about the nature of knowledge and knowing (Hofer & Pintrich, 1997) have considered preservice teachers' beliefs as "unsophisticated", based on the assumption that the content of their beliefs is what defines them as sophisticated or unsophisticated (e.g., Brownlee, Schraw, & Berthelsen, 2011). Others have suggested, however, that this assumption might be misleading (Herron, 2010; Herron, Samarapungavan, & Yadav, 2012). Herron (2010) noticed that one possible source of this assumptions could have been the disconnection between research on preservice teachers' epistemic beliefs and current work in epistemology and the philosophy of science. In this sense, it may be possible that a similar assumption is being shared by other lines of research on preservice teachers' beliefs, and this might be due to their disconnection to literature related to the content of the beliefs that are being examined (e.g., teacher effectiveness, the nature of knowledge and knowing, learning). In light of this argument, it could be suggested that before considering preservice teachers' beliefs as naïve or unsophisticated, it is important to reflect on their beliefs within the context of the literature related to their content or meaning.

Interrelated Meanings?

As discussed previously, in some cases participants' beliefs might be seen as interrelated or as part of some sort of belief system. This supports the idea that teachers' beliefs could be understood as complex system of interconnected beliefs. According to Nespor (1987), teachers' beliefs about different aspects of teaching and learning are organized as a system of beliefs that assists them in defining goals and dealing with ill-

structured problems in the classroom. Similarly, Tsai (2002) suggested that teachers' beliefs about teaching and learning are closely aligned to one another (e.g., traditional views of teaching and learning), and could be seen as a system of nested epistemic beliefs about teaching and learning. An issue with this view is that these models have been proposed in the context of inservice teachers. Could this also be the case of preservice teachers?

On the other hand, results also suggested that some of elementary preservice teachers' beliefs seem to be completely independent from one another. This finding could be understood using an atomistic view of individuals' beliefs (Schwitzgebel, 2011). Accordingly, it seems that the meaning of preservice teachers' beliefs does not necessarily have to be related to the meanings of their other beliefs, at least when referring to teacher effectiveness. This is not surprising as others have suggested that individuals' beliefs could be considered as a system of more-or-less independent beliefs that do not necessarily develop in synchrony and may not be related to one another (Schommer, 1990; Schommer-Aikins, 2004).

During the analysis of the data, the researcher noted that most preservice teachers were trying to provide support to or justify their beliefs about teacher effectiveness based on students-related outcomes (e.g., learning, motivation). A recurrent question the researcher had was, "why do preservice teachers make reference to students outcomes when discussing things that are specifically related teaching?" One possible reason could be that preservice teachers' beliefs are not always interrelated at the meaning level, but they might be so at a domain-general level. In this sense, their general beliefs about teaching and learning (domain-general level) might be interrelated (or nested), but when

looking at their beliefs at a finer-grain level (e.g., beliefs about the different aspects involved in effective teaching) they do not necessarily have to be interrelated. However, the question of whether elementary preservice teachers' beliefs are or not interrelated seems to be still open for further research.

Shared Meanings?

Another lesson that could be learnt from the data was that preservice teachers from different contexts might share some of meanings embedded in their beliefs about teacher effectiveness. As discussed above, many of the findings in the present study seem to support those of previous studies, which were conducted with preservice teachers in different contexts and using diverse methodological and theoretical approaches. For example, being "friendly", "caring", and/or "accepting" were common beliefs found among preservice teachers in almost all studies reviewed by the researcher. In addition, "providing structure" was a common belief found in the studies conducted by Witcher and Onwuegbuzie (1999) and Ng et al. (2010). Similarly, Murphy et al. (2004), Walls et al. (2002), and Weinstein (1999) also found "establishing relationship with students" as a common belief among preservice teachers. Other common beliefs found among preservice teachers are: excited, passionate (Witcher & Onwuegbuzie, 1999); fun/humorous (Murphy et al., 2004); organized, patient (Ng et al., 2010).

Although some scholars have suggested that beliefs do not require consensus regarding their appropriateness (e.g., Nespor, 1987; Nisbett & Ross, 1980; Smith & Siegel, 2004), others have supported the notion that beliefs are socially constructed (e.g., Tabachnick & Zeichner, 1984; Van Fleet, 1979). For example, Tabachnick and Zeichner

(1984) suggested that teachers' beliefs are socially defined interpretations of experience that provide meaning and shape their behavior in the classroom.

Furthermore, from a constructivist/interpretivist perspective (Guba, 1990; Lincoln & Guba, 2013; Lincoln et al., 2011), it could be argued that identifying shared meanings among preservice teachers' beliefs was possible because they could have socially constructed their beliefs, either by interaction with other preservice teachers with some shared level of experience, or learned from others (e.g., teachers) through vicarious experiences, or through enculturation and socialization practices in academic contexts. As noted in Chapter 4, these shared beliefs, whether formed jointly, learned, or inherited from culture, were not arranged or apprehended in the same way by all preservice teachers. In this sense, they seem to share some central aspects of the meaning embodied in their beliefs, but they may not share the exact, same belief.

A Continuous Act of Construal

Another lesson learned from the data was that preservice teachers' beliefs might be shaped by new experiences they encounter during their training programs. In this sense, preservice teachers' beliefs could change as they navigate teacher education. As previously discussed, the analysis of the data suggested that preservice teachers saw willingness to learn/improve as a key characteristic of effective teachers. Since the idea of the teacher as a lifelong learner has become one of the central principles of many teacher education programs (Korthagen et al., 2005), it could be argued that perhaps preservice teachers constructed this belief based on the experiences they have as part of their training (e.g., methods courses, field experiences).

Furthermore, the results suggested that preservice teachers' beliefs about some aspects of teacher effectiveness (e.g., types of pedagogical approaches used for effective instruction, the role of the teacher) may differ according to their points of enrollment in the teacher education program. Although this does not coincide with what others have found in previous studies (e.g., Murphy et al., 2004; Ng et al., 2010; Walls et al., 2002; Weinstein, 1989), it does raise the question of whether preservice teachers' experiences during teacher preparation programs could be a possible source of some of their beliefs about teacher effectiveness. From the researcher's perspective, it seems counterintuitive to assume that regardless of the diverse array of educational experiences preservice teachers encounter in their college years, they manage to go through teacher education maintaining unaltered beliefs about teaching.

This has been a topic of strong debate in the literature on teachers' beliefs (Ben-Peretz et al., 2003; Lasley, 1980; Nespor, 1987; Nisbett & Ross, 1980; Pajares, 1992; Stuart & Thurlow, 2000). For example, Nisbett and Ross (1980) suggested that teachers' beliefs are constrained by what they called, "the perseverance phenomenon of theory maintenance". According to this phenomenon, once teachers have formed a belief they tend to build causal explanations around that belief in order to protect it from been confronted. Nespor (1987) further suggested that since teachers' beliefs have an important functional explanatory role, they could not be easily changed just by objectively confronting them with empirical evidence. Similarly, Pajares (1992) pointed that teacher beliefs "are formed early and tend to self-perpetuate, preserving even against contradictions caused by reason, time, schooling, or experience." (p. 324). Other scholars have suggested, however, that teachers' beliefs might not be that stable. Lasley (1980)

argued that although teachers' beliefs can endure unaltered for long periods of time they could change when deliberately challenged at a conscious level. Similarly, Stuart and Thurlow (2000) also pointed that teachers' beliefs could change when challenged by new experiences in which they can no longer play an explanatory role. Others have further suggested that school and instructional contexts could significantly impact teachers' beliefs (Ben-Peretz et al., 2003).

In the case of preservice teachers' beliefs, some scholars have suggested that preservice teachers' beliefs about different aspects of teaching are often highly resistant to change and persist during teacher preparation, sometimes continuing basically unaffected in their professional practices (Pajares & Bengston, 1995; Zeichner, 1986). According to Pajares (1993), this could be due to fact that their beliefs are well established by the time they get to college and play an important role in their perceptions of and dispositions to the knowledge and experiences they come across during formal teaching training programs. Other researchers have suggested, however, that the homogeneity of preservice teachers' prior educational related experiences could result in stereotypical beliefs pertaining to education (Feiman-Nemser & Remillard, 1996; Lortie, 1975). According to Stuart and Thurlow (2000), differences in preservice teachers' beliefs could be therefore a direct consequence of different experiences in educational contexts. Similarly, Hancock and Gallard (2004) concluded that the experiences preservice teachers encounter during teacher education could challenge their beliefs about different aspects of teaching.

From a constructivist/interpretive perspective, beliefs can be understood as mental constructions that are formed through a continuous act of construal; they are open to

continuous reconstruction or refinement as individuals encounter new experiences and attempt to make sense of them (Lincoln & Guba, 1985, 2013). This implies that the demands of new experiences preservice teachers encounter during teacher education could shape their beliefs about teaching, learning, and education in general. From a phylogenetic point of view, if beliefs are thought to have an instrumental and adaptive function (Nisbett & Ross, 1980; Pajares, 1992), therefore it seems counterintuitive to think that they will rarely be open to any change. From an ontogenetic point of view, just as other individuals refine their beliefs and other cognitive attitudes as they go through different stages in life (Miller, 2011), preservice teachers could also change or adapt their beliefs as they engage in new experiences in teacher education programs.

Relevance of the Study for Theory and Practice

This study addressed an important gap in the literature on preservice teachers' beliefs about teacher effectiveness. Our current understanding of this phenomenon is still very limited, particularly in elementary preservice teachers. Considering the relevance of preservice teachers' beliefs for teacher education (Clark, 1988; Pajares, 1992, 1993; Richardson, 2003), as well as the longstanding consensus in research on teacher effectiveness regarding the impact that effective teachers have on students' learning and achievement (Darling-Hammond, 2009; Liston et al., 2008; Newton et al., 2010; Rothstein & Mathis, 2013), it was crucial to develop a more comprehensive account of the nature and development of preservice teachers' beliefs about teacher effectiveness. In this sense, this study provides a deeper understanding of elementary preservice teachers' beliefs about effective classroom instruction and the characteristics and behaviors of

effective teachers, as well as new insights to the question of whether these beliefs remain or not stable during teacher education. Additionally, it raises new questions that need to be further explored in future studies (e.g., why in some cases elementary preservice teachers' beliefs about teacher effectiveness seem to be interrelated and not in others?).

There are several lessons that emerged from the analysis of the findings that should be taken into account in developing a better sense of elementary preservice teachers' beliefs about teacher effectiveness. As showed above, elementary preservice teachers may have a wider range of beliefs regarding an effective classroom instruction and the characteristics and behaviors of effective teachers. An important implication of the findings is that the present study provides a more comprehensive framework for developing new measures that could be more sensible to preservice teachers' beliefs about teacher effectiveness and be used with larger groups of participants (e.g., surveys). Accordingly, it is important for future studies to investigate the beliefs preservice teachers hold about other aspects of teacher effectiveness (e.g., effective classroom instruction).

Furthermore, teacher educators should consider that elementary preservice teachers may bring a broad array of beliefs about different aspects of teacher effectiveness, and that these beliefs could impact what and how they learn during teacher preparation programs. As Pajares (1993) suggested, preservice teachers beliefs could play a crucial role in the perceptions of and dispositions to experiences they have during their teaching training. For example, by having a better understanding of elementary preservice teachers' beliefs about what effective teachers do in the classroom, teacher educators could develop method courses and field experiences that challenge their beliefs

about the behaviors of effective teachers at the meaning and complexity levels. For instance, a preservice teacher who believes that effective teachers have to always make sure students are on task and following rules, could be challenged by designing an activity in which she/he is asked to examine cases showing that this sort of control-related behaviors may not be always suitable in facilitating students' learning of socialization and communication skills (Bos & Vaughn, 2002). As discussed in Chapter 2, beliefs could be further refined when deliberately challenged at a conscious level (Lasley, 1980) or when challenged by new experiences in which they can no longer play an explanatory role (Stuart & Thurlow, 2000). Case studies, especially video cases, have the potential of offering preservice teachers with vicarious experiences that challenge their beliefs (Yadav, 2008; Yadav & Koehler, 2007).

Additionally, the fact that some of participants' beliefs do not seem to be as naïve as previous research has suggested also posits important challenges to research on preservice teachers' beliefs about teacher effectiveness and teacher education. This has important implications for teacher educators, who should not presuppose that preservice teachers would come to teacher preparation programs holding "inadequate" beliefs about teacher effectiveness. Failing to acknowledge this could lead teacher educators to develop activities in their classes that may hinder preservice teachers' understanding of effective classroom instruction and the characteristics and behaviors of effective teachers. In this sense, teacher educators should also identify which of preservice teachers' beliefs might concur with current research on teacher effectiveness, and then develop activities in their classes that promote the refinement of more sophisticated beliefs.

For example, let us assume that a preservice teacher come into the teacher preparation program holding the belief that effective instruction heavily depends on how the physical environment of the classroom is configured (which concurs with current research on teacher effectiveness, as discussed previously in this chapter), but she/he does not recognize which specific elements of the physical classroom arrangement could have significant impact on students' learning and motivation. Based on a constructive/ interpretive understanding of individual's beliefs, one way in which we could help this student to enhance her/his belief would be to incorporate activities (field experiences, video cases, etc.) that allow her/him to observe and discuss elements of the physical environment of the classroom (e.g., classroom's organization) with their peers, teacher educators, and/or experienced inservice teachers. As it was discussed on Chapter 2, beliefs could be refined through vicarious experiences or inherited from culture and socialization practices (Lincoln & Guba, 2013). Thus, activities that required preservice teachers to probe others' beliefs could help them in developing more sophisticated beliefs.

Additionally, results from this study suggest that preservice teachers' beliefs may differ according to their points of enrollment (e.g., first year, second-third year, and student teaching). Although exploratory, these results seem to concur with those found in previous studies on preservice teachers' beliefs (e.g., Hancock & Gallard, 2004; Stuart & Thurlow, 2000); that is, differences in elementary preservice teachers' beliefs about teacher effectiveness may be also a direct result of the diverse array of experiences available in the context of teacher education. In this sense, their beliefs should be understood as mental constructions that are formed through a continuous act of construal;

they are open to continuous reconstruction or refinement as preservice teachers encounter new educational experiences and attempt to make sense of and organize them into more sophisticated beliefs.

Results from this study also have important implications for research on preservice teachers' beliefs in general. Specifically, the findings suggest that in some cases preservice teachers' beliefs might be interrelated to other beliefs, but in other cases they could be independent. This tackles the issue of whether preservice teachers' beliefs can form a coherent belief system (Nespor, 1987; Pajares, 1992, 1993; Richardson, 2003), or if they have to be understood as a system or more-or-less independent beliefs. We suggest that preservice teachers make sense and organize their educational experiences by constructing both interrelated and independent beliefs. Exploring why, how, and when preservice teachers construct their beliefs in such ways could contribute to our understanding of preservice teachers' thinking process as they navigate teacher education and later in their professional practice.

Finally, this study also addressed important methodological limitations found in previous studies. Particularly, it addressed the ecological validity issue found in studies using Likert-scale questionnaires based on statements resembling researchers' views of models of teacher effectiveness, and which may not necessarily assess preservice teachers' actual beliefs. This issue was avoided by using qualitative methods of data collection and analysis, which made possible an in-depth exploration of elementary preservice teachers' beliefs about teacher effectiveness. Following the recommendations of Connelly and Clandinin (1986), Munby (1982), and Pajares and Bengston (1995), the implementation of a qualitative methodological approach was key in providing a deeper

understanding of participants' beliefs. In this sense, using grounded theory methods of data collection and analysis assisted the researcher in developing an understanding of elementary preservice teachers' belief about teacher effectiveness at a finer grain level of analysis (i.e., code level), and allowed him to uncover a variety of meanings embedded in participants' beliefs. For example, although other studies have found that preservice teachers usually consider being friendly or welcoming as an important characteristic of effective teachers, it was not very clear what they could actually mean by "being friendly or welcoming". The findings of the present study suggest that elementary preservice teachers could consider being friendly/welcoming as being an approachable person who listens or talks to students about their academic and personal concerns, or as a nice person who can get along with others, or as a person who keeps a balance between being friendly and being firm or in charge.

Challenges and Limitations of the Study

Perhaps the greatest challenge in conducting interpretative inquiry is the researcher itself. According to Patton (2002), "the human factor is the great strength and the fundamental weakness of qualitative inquiry and analysis – a scientific two-edged sword." (p. 433). From an interpretative standpoint, it is assumed that the results obtained from the inquiry process are, to a considerable extent, researcher's reconstructions of phenomena and do not denote an isomorphic, unbiased representation (Creswell, 2013; Lincoln & Guba, 1985). In this sense, the researcher acknowledges that his values, biases, and previous experiences as a teacher could have shaped the inquiry process and the interpretation of participants' responses.

Since the purpose of interpretative inquiry is to achieve understanding of others' constructions (Lincoln & Guba, 2013), it was crucial that the researcher recognized the presence of his biases in the study. According to Lincoln and Guba (1985), the researcher should attempt to control for the potential effects of his/her biases in the interpretation of phenomena. In other words, the researcher shall establish safeguards that help him/her protect the inquiry process from him-self, and thus ensure that his analyses and interpretations do not result in ad hoc, capricious "understandings" of phenomena. To address this issue, the researcher put in place various methodological safeguards (e.g., qualitative validity and reliability procedures, ethical considerations), and also provided an explicit and detailed reflection on his theoretical and methodological assumptions, values, and experiences.

The researcher also encountered challenges related to the processes of data collection and analysis. One of these challenges was failing to obtain enough data from preservice teachers enrolled as student teachers in the program. This may have been due to the fact that participants in this group were placed in schools that were not close to the research site, and therefore may not had had enough time to participate in the study. Since participation in the present study was completely voluntary, the researcher could not have control over this issue. As an attempt to overcome this challenge, the researcher sent a second invitation letter during data collection and contacted the Field Experience Office to ask for assistance in contacting this group of students. These attempts, however, were not fructiferous and only four student teachers ended up voluntarily agreeing to participate in the study.

The present study also had some limitations. These limitations have to do with the "intrinsic bias that comes from single-methods, single-observer, and single-theory studies." (Denzin, 1989, p. 307). First, having used interview as the only method for collecting the data made the study vulnerable to issues of credibility and dependability, such as obtaining untrue or biased responses from participants and preventing the researcher from understanding other nuances of participants' beliefs about teacher effectiveness that could be only revealed by using or combining other methods (e.g., observation, document analysis). A second limitation was that only one person (i.e., the researcher) was responsible for collecting, analyzing, and interpreting participants' responses, which also represented a threat to the overall trustworthiness of the study. According to Patton (2002), having various researchers directly involved in all stages of the study can provide means for assessing the consistency of the data collected, as well as the accuracy of the analysis and interpretation of the findings. Finally, using a single theoretical framework (i.e., interpretivist/constructivism) could have constraint the researchers' interpretative power in understanding participants' beliefs about teacher effectiveness. According to Creswell (2009, 2013) using different perspectives or theoretical frameworks to interpret the findings of the study could provide more opportunities to deepen the understanding of the phenomenon being studied.

In sum, these interrelated issues (i.e., having a single method of data collection, a single researcher, and a single theoretical framework) could have increased bias and threaten the trustworthiness of the study. However, various methodological safeguards were put in place to control for these limitations and ensure the credibility and dependability of the findings. First, the researcher used three validation techniques to

strengthen the credibility of his findings and interpretations. One of these techniques consisted of using Charmaz (2006)'s guiding questions to ensure gathering quality data. Specifically, Charmaz suggested using questions about whether we have gain a detailed description of a range of participants' views, as well as whether the data reveal what lies beneath the surface and enable us to develop analytic categories. Taking this type of questions into consideration aided the researcher in determining the richness and relevance of data regarding preservice teachers' beliefs about teacher effectiveness. Another safeguard the researcher used was member checking. Following the recommendations of Lincoln and Guba (2013), the interview transcripts were sent to each of the participants to allow them to check for accuracy of their thoughts. Additionally, the researcher also shared preliminary findings with the participants so they had a chance to check how accurately the researcher described their beliefs. To further the trustworthiness of the findings, the researcher also worked with an external auditor. The auditor was a scholarly academic who did not have direct participation in the study and scrutinized the processes and products of the research. Finally, the researcher used intercoder reliability in order to ensure the consistency of his analyses and interpretations of the data, and thus strengthen the dependability of the findings.

Recommendations for Future Research

An important limitation that should be addressed in future studies has to do with the potential bias that emerged in the study from using a single method of data collection to interpret the findings. Future research should obtain data using a mixed method approach from different sources; it could be advantageous to use other methods such as

survey and document analysis in order to increase the credibility and dependability of findings, as well as to expand our understanding of elementary preservice teachers' beliefs about teacher effectiveness. This could provide researchers with an opportunity to uncover new categories and themes that may have been neglected in the present study.

Additionally, it would also be interesting to use grounded theory as a methodological framework, not just some of its methods (e.g., initial and focus coding). According to Charmaz (2006, 2012), grounded theory could be use as a method for studying process. In this sense, it could be use to further explore the processes through which elementary preservice teachers constructed their beliefs about teacher effectiveness, as well as the processes by which they continuously refine these beliefs (e.g., developmental trajectories).

Another limitation that should be addressed in future studies has to do with the bias that could have emerged from using a single theoretical framework. Although a constructivist/interpretivist framework was useful in making sense of preservice teachers' beliefs, it could also be fruitful to look at new data using other lenses. One interesting venue of research could be to explore preservice teachers' beliefs using the ecological system theory proposed by Urie Bronfenbrenner, in order to look at their beliefs about teacher effectiveness from a multi-level contexts perspective (Bronfenbrenner, 2005). Using this framework could assist researchers to gain a deeper understanding of how preservice teachers' beliefs "behave" across different contextual levels (e.g., classroom, early field experiences, student teaching). Perhaps this would help us not only to provide some light over the issue of whether preservice teachers' experiences in teacher education

programs may shape their beliefs about teachers effectiveness, but also which of those experiences could be more determinant.

The findings obtained from this study also raised several questions that need to be further addressed in future studies. As discussed above, some of these questions are related to the possible linkage among the beliefs elementary preservice teachers hold regarding different aspects of teacher effectiveness (e.g., characteristics of effective teachers vs. behaviors of effective teachers), as well as their relationship to some of their other beliefs (e.g., beliefs about learning). Additionally, there are other questions that remain open regarding potential differences between elementary and secondary preservice teachers' beliefs, as well as differences between preservice and inservice teachers. Finally, it could also be worthy to continue investigating variations in preservice teachers' beliefs about teacher effectiveness across teacher education programs, and the implications these beliefs may have for their learning and future professional practice.

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APPENDIX

APPENDIX

Interview Protocol

Rapport

- Salutation
- How's the semester going so far?

Introduction

"Thank you for volunteering to participate in this study. Before we start, I would like to ask you to read the following information (consent form) regarding the study. While you read it, please feel free to ask me any questions you might have about the study (wait for participant to read the information and ask questions. Answer questions as necessary. If participant continues to be willing to participate, ask her/him to sign the consent form and provide him/her with a copy. Then continue to the next paragraph)."

"There is some information about the interview that I would like to share with you before we start. During the next 45 minutes to an hour, I will ask you some questions regarding what you think about an effective classroom instruction and the characteristics and behaviors of effective teachers. I will also ask you to watch two

short videos of teacher interacting with students in a classroom and ask you some questions about them. *There is not right or wrong answer to any of the questions; I am only interested in knowing what you think*. All the information you share in this interview will be used for research purposes only."

Questions - Phase I

1. Could you please describe an *ideal classroom* for me?

   Prompt 1.1. You were talking about _____, is that right?

   Prompt 1.2. Why do you think _____ is/are important?

   Prompt 1.3. Could you please elaborate more on that?

   Prompt 1.4. Could you think of any other things that may be going on in an ideal classroom?

   Prompt 1.5. Have you been in a classroom with those or similar characteristics?

   Prompt 1.6. Could you describe what was going on in that classroom?

2. What do you think is the *role* of the teacher in an ideal classroom?

   Prompt 2.1. You were talking about _____, is that right?

   Prompt 2.2. Why do you think _____ is/are the role of the teacher?

   Prompt 2.3. Could you please elaborate more on that?

3. What do you think is the *role* of the students in an ideal classroom?

   Prompt 3.1. You were talking about _____, is that right?

   Prompt 3.2. Why do you think _____ is/are the role of the students?

   Prompt 3.3. Could you please elaborate more on that?

4. What do you think is the *role* of the classroom environment?

Prompt 4.1. You were talking about _____, is that right?

Prompt 4.2. Why do you think _____ is/are the role of the environment?

Prompt 4.3. Could you please elaborate more on that?

5. What do you think are *personal attributes* of an effective teacher?

Prompt 5.1. You were talking about _____, is that right?

Prompt 5.2. Why do you think _____ is/are an important attribute(s)?

Prompt 5.3. Could you please elaborate more on that?

Prompt 5.4. Could you think of any other attributes?

Prompt 5.5. Have you been in a classroom where the teacher had those or similar attributes?

Prompt 5.6. Could you please describe her/him?

6. What does an effective teacher *do* in the classroom?

Prompt 6.1. You were talking about _____, is that right?

Prompt 6.2. Why do you think _____ is/are important?

Prompt 6.3. Could you please elaborate more on that?

Prompt 6.4. Could you think of any other things effective teacher do in the classroom?

Prompt 6.5. Have you been in a classroom where the teacher exhibited those or similar behaviors?

Prompt 6.6. Could you please describe her/him?

Questions - Phase II

7. What do you think about the classroom you just observed?

Prompt 7.1. What things stood out for you about what you saw?

Prompt 7.2. You were talking about _____, is that right?

Prompt 7.3. Why do you think _____ stood out for you?

Prompt 7.4. Could you please elaborate more on that?

8. Would you consider this an example of an effective classroom instruction?

Prompt 8.1. Why? Why not?

Prompt 8.4. Could you please elaborate more on that?

9. What would you recommend to the teacher you just saw to become a more effective teacher?

Prompt 9.1. You were talking about _____, is that right?

Prompt 9.2. Why would you recommend that teacher to _____?

Prompt 9.3. Could you please elaborate more on that?

(Questions 7 through 9 asked for both videos).

Compensation is provided to participants.

Closing Statement and Member Checking Agreement

"Thank you very much for you time and all the valuable information you have shared with me. An important aspect of this study is to assure that the transcriptions of the interviews, as well as the analysis I will make later on the information you have shared with me, truly represent what your thinking. Would it be okay if I contact you

later by email and ask you to check on the accuracy of the transcriptions and my analysis of your responses? Thank you.

VITA

VITA

Bibliographical Information

Personal

Name: Mauricio A. Herron

Address: Km 5, via Puerto Colombia

Universidad del Norte, Office 3-4C

Barranquilla, Colombia.

Phone: (57) 5 3509509, ext. 3394

Email: mherron@uninorte.edu.co, mauherron@gmail.com

Education

2010-2015: PhD in Educational Psychology, Purdue University.

Thesis: Elementary preservice teachers beliefs about teacher effectiveness.

Chair: Aman Yadav, PhD.

2008-2010: MSEd in Educational Psychology, Purdue University.

Thesis: Secondary preservice teachers' epistemic profiles across domains.

Chairs: Ala Samarapungavan, PhD.; Aman Yadav, PhD.

2000-2005: B.S. in Psychology, Universidad Del Norte, Colombia.

Thesis: Undergraduate students' conceptions about learning.

Chair: José A. Aparicio, PhD.

Appointments

07/2014- Present: Director, Master's in Education, Universidad del Norte. Barranquilla, Colombia.

07/2014- Present: Assistant Professor, Department of Education, Universidad del Norte. Barranquilla, Colombia.

08/2012- 05/2014: Teaching Assistant – EDPS 235/Block II, Department of Educational Studies, Purdue University.

01/2012- 05/2012: Research Assistant – Project INSPIRE, Department of Engineering Education, Purdue University.

08/2011- 12-2011: Research Assistant, Department of Educational Studies, Purdue University.

08/2010- 05/2011: Teaching Assistant –EDPS 235/Block II, Department of Educational Studies, Purdue University.

05/2010- 06/2010: Teaching Assistant –Study Abroad Block II / India, Department of Educational Studies, Purdue University.

08/2007-06/2008: Limited-Time Professor, Department of Psychology, Universidad Del Norte. Barranquilla Colombia.

02/2007-02/2008: COLCIENCIAS Young Researcher Fellow, Department of Psychology, Universidad Del Norte. Barranquilla, Colombia.

08/2006-10/2006: Research Assistant, Division of Research and Projects, Universidad Del Norte. Barranquilla, Colombia.

06/2005-06/2006: UNINORTE Young Researcher Fellow, Department of Psychology, Universidad Del Norte. Barranquilla, Colombia.

Academic Awards and Honors

Cecilia Zissis Graduate Student Grant, Purdue University (2011-2012)

Fulbright Fellow, Fulbright – Ministry of Education, Colombia (2008-2010)

Young Researcher Fellow, COLCIENCIAS, Colombia (2006-2007)

Young Researcher Fellow, Universidad del Norte, Colombia (2005-2006)

Membership in Professional Organizations

American Educational Research Association (2010-Present)

Grupo Cognicion y Educacion, Universidad del Norte, Colombia (2010-Present)

COLCIENCIAS, Colombia (2005-Present)

Research

Publications

Refereed Journals

1. Young, M., **& Herron, M. A.** (under review). Redesign to promote conceptual change in an educational psychology course. T*ranslational Issues in Psychological Science.*
2. **Herron, M. A.** (2010). Epistemology and epistemic cognition: The problematic virtue of relativism and its implication for science education. *Journal Zona Próxima, 12*, 96-107.
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4. Aparicio, J. A. & **Herron, M. A.** (2006). ¿Cómo creen que aprenden los que estudian sobre el aprendizaje? Una mirada a las concepciones intuitivas del aprendizaje de los estudiantes de psicología de la UNINORTE. *Psicología Desde el Caribe, 17*, 29-57.

Book Chapters

5. Yadav, A., **Herron, M. A.,** & Samarapungavan, A. (2011). Personal epistemologies in teacher preparation. In J. Brownlee, G. Schraw, D. Berthelsen (Eds.). *Personal Epistemology and Teacher Education* (pp. 25-39). London: Routledge.

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6. **Herron, M. A.** (August 2010). Secondary preservice teachers' epistemic profiles across domains. Unpublished master's thesis. Department of Educational Studies, Purdue University, West Lafayette, Indiana.
7. **Herron, M. A.** & Aparicio, J. A. (June 2008). Diferencias en las concepciones acerca del aprendizaje por dominios: El caso de estudiantes de psicología e ingeniería. Division of Research and Projects, Universidad Del Norte, Colombia.
8. Aparicio, J. A. & **Herron, M. A.** (June 2007). Concepciones acerca del aprendizaje de estudiantes de pregrado y su relación con el logro académico. Division of Research and Projects, Universidad Del Norte, Colombia.
9. **Herron, M. A.** (November 2005). Estudio descriptivo-comparativo de las concepciones sobre el aprendizaje de estudiantes de pregrado. Unpublished undergraduate thesis. Department of Psychology, Universidad Del Norte, Colombia.

International and National Conferences

10. **Herron, M. A.**, Samarapungavan, A., & Yadav, A. (April, 2012). STEM preservice teachers' epistemic constructs across domains. Paper accepted at the AERA Annual Research Meeting. Vancouver, British Columbia, Canada.
11. **Herron, M. A.** (March, 2010). Secondary preservice teachers' epistemic profiles across domains. Poster presented at the Annual Graduate Student Educational Research Symposium. Purdue University, West Lafayette, Indiana.

Research Grants

Extramural

1. Psychology and engineering students' conceptions about leaning. (2007-2008). Agency: COLCIENCIAS, Colombia. Amount: $14'400,000 Colombian pesos (US$ 7,200 aprox.). PI: J. A. Aparicio, PhD. CoPI: M. A. Herron.

Intramural

2. Undergraduate students' conceptions about leaning and academic achievement. (2005-2006). Agency: Universidad Del Norte, Colombia. Amount: $ 9'600,000 Colombian pesos (US$ 4,800 aprox.). PI: J. A. Aparicio, PhD. CoPI: M. A. Herron.

Teaching

Invited Guest Lectures

1. Epistemic beliefs: Implications for teaching and learning. EDPS235/Block II, Department of Educational Studies, Purdue University (February, 2013).
2. Metacognition: Theory and classroom applications (video-conference). Master in Education, Universidad Del Norte, Colombia (December, 2010).

Courses Taught at Universidad Del Norte

1. EDU 4543 – Socio-emotional Development.

2. PSI 4401 – Fundamentals of Children Neurological Development.
3. PSI 1290 – Tendencies and cognitive authors.
4. INV 7590 – Research Seminar VII.
5. INV 7420 – Research Seminar IV.
6. INV 4090 – Research Seminar II.

Courses Taught at Purdue University

7. EDPS 235 – Learning and Motivation, Elementary Teaching Recitation.
8. EDPS 265 – The inclusive Classroom, Secondary Teaching Recitation.

Services

Purdue University Committees

1. College of Education International Committee (2013).
2. Teacher Education Council (2013).
3. College of Education Awards Committee (2011 - 2013).
4. 5th Annual Graduate Student Educational Research Symposium (2011).
5. Graduate Organization of Educational Studies – President (2010-2011).
6. Graduate Organization of Educational Studies – Secretary (2009-2010).

Universidad Del Norte Committees

7. Curriculum Committee of the Department of Education (2014-Present).
8. Curriculum Committee of the Master's in Education Program (2014-Present).

9. Committee for Academic Recognitions (2004).
10. Students' Scientific Committee of the Department of Psychology (2002).

References

Aman Yadav, PhD

Associate Professor

College of Education

Michigan State University

458 Erickson Hall

620 Farm Lane

East Lansing, MI 48824

ayadav@msu.edu

Michael Yough, PhD

Assistant Professor

Department of Educational Studies

Purdue University

West Lafayette, IN 47907

(765) 496-2354

myough@purdue.edu

Leonor Jaramillo De Certain, Mg

Dean Instituto de Estudios en Educacion [IESE]

Universidad del Norte

Km5 via Puerto Colombia

Barranquilla, Colombia

(+57) 5 3509799

ljaramil@uninorte.edu.co